Textile Industries

JUNE, 1951

formerly COTTON Textile Industries

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MORE THAN 2,000,000
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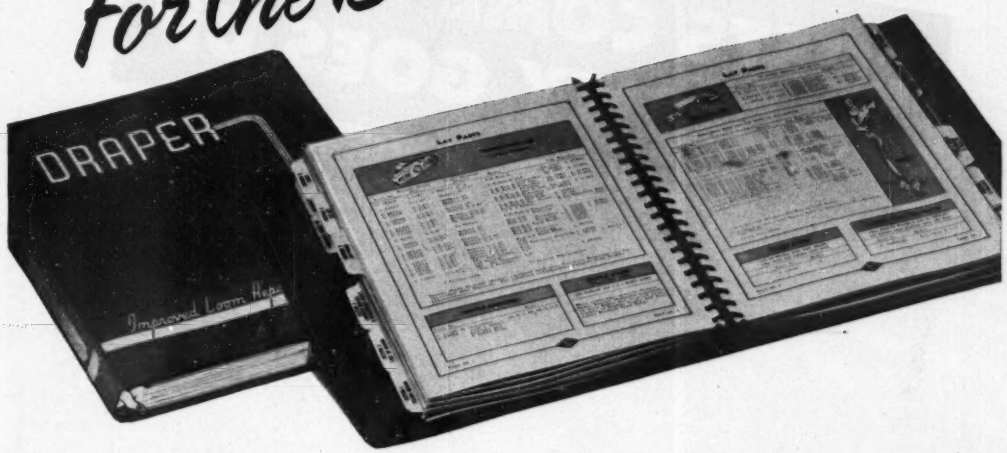
Volume 115 Number 6

For the Best



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Textile Industries

Volume 115, Number 6
June, 1951

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"Textile Industries" has the largest circulation among the mills of the United States and Canada of any textile publication.

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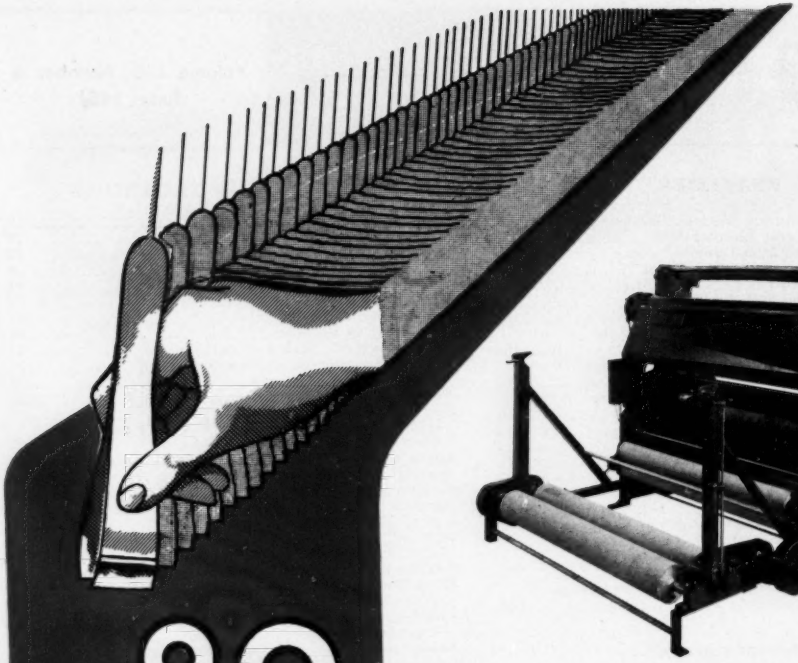

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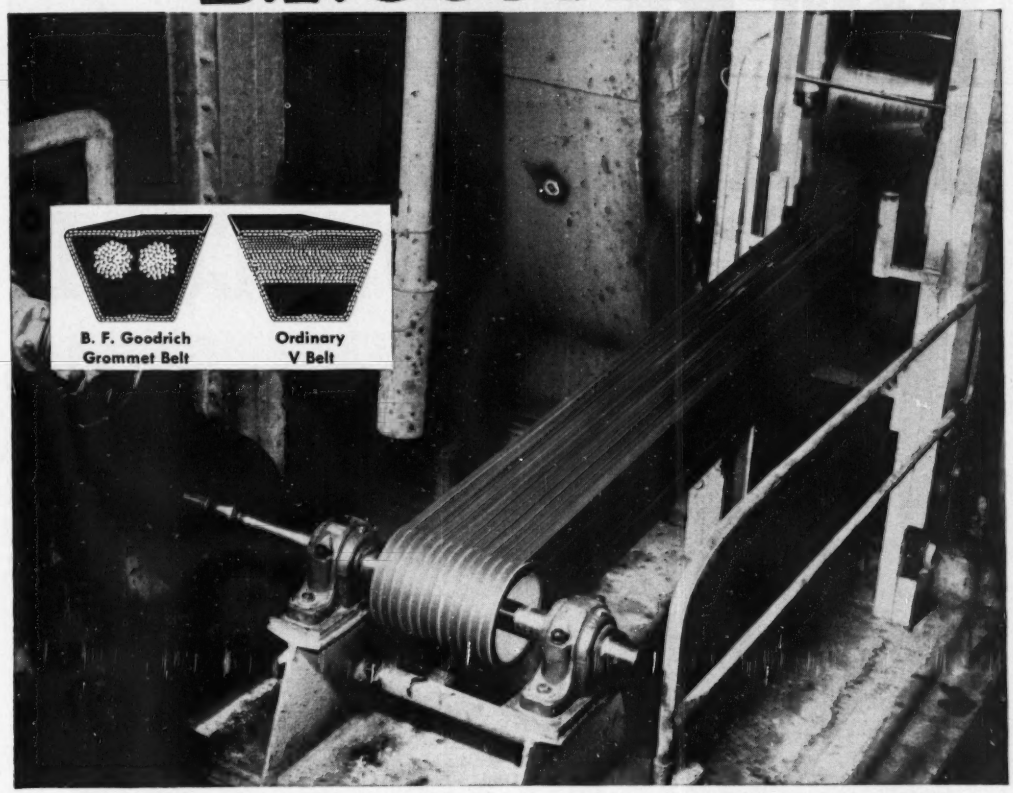

Belt service tripled by changing to B. F. Goodrich grommet belts

B. F. Goodrich grommet V belts cut costs 20 to 50%

ORDINARY V belts on this drive (a big fan for drying grain) lasted 1674 hours. The company wanted to cut costs by getting longer life from belts so they called in a B. F. Goodrich man and B. F. Goodrich grommet belts were installed. Grommet V belts ran 5153 hours . . . more than three times longer than ordinary belts. Why is this a typical example of grommet belt performance — why do grommet V belts outlast other belts?

Endless — A grommet is endless, made by winding heavy cord on itself to form an endless loop. It has no overlapping cord sections. Because most of the failures in ordinary V belts occur in the region where cords overlap, the endless grommet belt eliminates such failures.

Concentrated cord strength — All of the cord material in a B. F. Goodrich grommet belt is *concentrated* in twin grommets, positioned close to the driving faces of the pulley. No layers of cords to rub against one another and generate heat; cord and adhesion failures are reduced.

Better grip, less slip — Because a grommet is endless, a grommet belt is more flexible, grips the pulleys better. Size for size, grommet belts will give ⅓ more gripping power, pull heavier loads with a higher safety factor.

Only B.F.Goodrich has the grommet! — No other multiple-V belt is a grommet belt (U. S. Patent No. 2,233,294). Now available in C, D and E sections. See your local B. F. Goodrich distributor. Ask him to show you his "X-ray" belt that illustrates grommet construction clearly. *The B.F.Goodrich Company, Industrial and General Products Division, Akron, Ohio.*

Grommet Belts BY
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RUBBER FOR INDUSTRY

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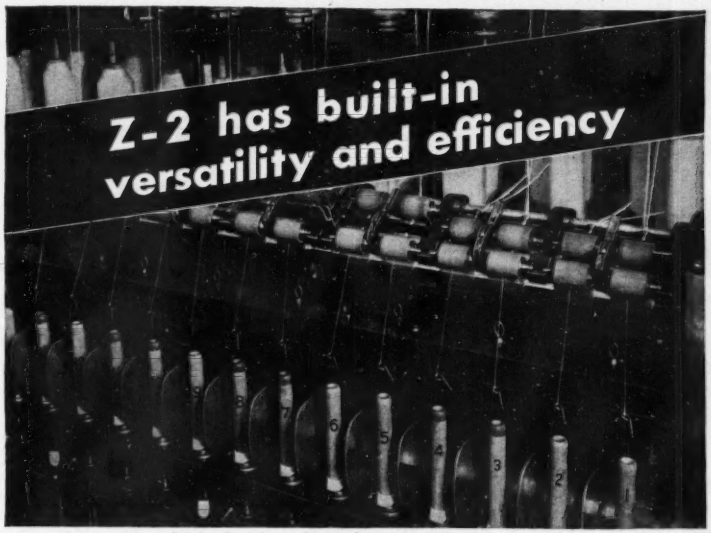

Running 8 stocks simultaneously on 13 spindles.

SPINDLES 1 *and* 2
1⅛" combed Peeler

SPINDLES 3 *and* 4
50% cut wool top 1⅛" staple
50% 3 denier viscose 1½" staple

SPINDLES 5 *and* 6
50% 3 denier viscose 2" staple
50% 3 denier acetate 2" staple

SPINDLES 7 *and* 8
100% 3 denier Celanese 2" staple

SPINDLE 9
30% 3 denier nylon 3" staple
70% 64's wool

SPINDLE 10
50% 3 denier nylon 3" staple
50% 3 denier viscose 2½" staple

SPINDLES 11 *and* 12
50% 3 denier viscose 2½" staple
50% 3 denier acetate 2½" staple

SPINDLE 13
100% 64's wool top

For these mills

the adoption of the Saco-Lowell Z System eliminates costly trials and experiments. The inherent flexibility and effective fibre control will facilitate the production of good yarns from any commercial blend known today, with satisfaction and efficiency in operating conditions.

Style shifts and consumer trends create no production obstacle for those mills having Saco-Lowell Model Z Spinning.

In addition to being time-tested and mill proven this system is

- **Simple in design**
- **Sturdy in construction**
- **Flexible in use**
- **Easy to clean**
- **Without complicated parts**
- **Easy to install as "changeovers" on present equipment**

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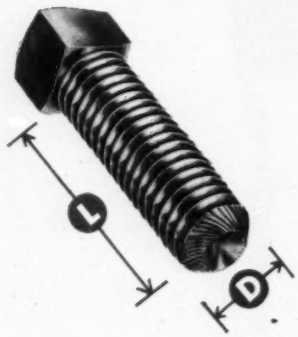

Their heads *"won't twist off"* and they have the famous self-locking knurled cup point which *"won't shake loose."* These two features make them particularly useful in "hard-to-get-at" places and on high-speed vibrating equipment.

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	20	⅝	4.60	100
	20	¾	4.90	100
	20	⅞	5.20	100
	20	1	5.50	100
	20	1¼	6.10	100
	20	1½	6.70	100
	20	1¾	7.30	100
	20	2	7.90	100
	20	2¼	8.50	100
	20	2½	9.10	100
	20	2¾	9.70	100
	20	3	10.30	100
5/16	18	½	5.35	100
	18	⅝	5.65	100
	18	¾	5.95	100
	18	⅞	6.25	100
	18	1	6.55	100
	18	1¼	7.15	100
	18	1½	7.75	100
	18	1¾	8.35	100
	18	2	8.95	100
	18	2¼	9.55	100
	18	2½	10.15	100
	18	2¾	10.75	100
	18	3	11.35	100
3/8	16	½	6.45	100
	16	⅝	6.85	100
	16	¾	7.25	100
	16	⅞	7.65	100
	16	1	8.05	100
	16	1¼	8.85	100
	16	1½	9.65	100
	16	1¾	10.45	100
	16	2	11.25	100
	16	2¼	12.05	100
	16	2½	12.85	100
	16	2¾	13.65	100
	16	3	14.45	100
	16	3¼	15.25	100
	16	3½	16.05	100
	16	3¾	16.85	100
	16	4	17.65	100
	16	4½	21.25	100
	16	5	24.85	100
7/16	14	⅝	7.40	100
	14	¾	7.90	100
	14	⅞	8.40	100
	14	1	8.90	100
	14	1¼	9.90	100
	14	1½	10.90	100
	14	1¾	11.90	100
	14	2	12.90	100
	14	2¼	13.90	100
	14	2½	14.90	100
	14	2¾	15.90	100
	14	3	16.90	100
	14	3¼	17.90	100
	14	3½	18.90	100
	14	3¾	19.90	100
	14	4	20.90	100
	14	4½	24.90	100
	14	5	28.90	100
1/2	13	⅝	8.90	100
	13	¾	9.40	100
	13	⅞	9.90	100
	13	1	10.40	100
	13	1¼	11.40	100
	13	1½	12.40	100
	13	1¾	13.40	100
	13	2	14.40	100
	13	2¼	15.40	50
	13	2½	16.40	50
	13	2¾	17.40	50
	13	3	18.40	50
	13	3¼	19.40	50
	13	3½	20.40	50
	13	3¾	21.40	50
	13	4	22.40	50
	13	4½	26.40	50
	13	5	30.40	50
	13	5½	34.40	50
	13	6	38.40	50
9/16	12	¾	11.40	100
	12	⅞	12.00	100
	12	1	12.60	100
	12	1¼	13.80	50
	12	1½	15.00	50
	12	1¾	16.20	50
	12	2	17.40	50
	12	2¼	18.60	50
	12	2½	19.80	50
9/16	12	2¾	21.00	50
	12	3	22.20	50
	12	3¼	23.40	50
	12	3½	24.60	50
	12	3¾	25.80	50
	12	4	27.00	50
	12	4½	29.50	50
	12	5	34.20	50
	12	5½	39.00	50
	12	6	43.80	50
5/8	11	¾	12.50	50
	11	⅞	13.20	50
	11	1	13.90	50
	11	1¼	15.30	50
	11	1½	16.70	50
	11	1¾	18.10	25
	11	2	19.50	25
	11	2¼	20.90	25
	11	2½	22.30	25
	11	2¾	23.70	25
	11	3	25.10	25
	11	3¼	26.50	25
	11	3½	27.90	25
	11	3¾	29.30	25
	11	4	30.70	25
	11	4½	33.50	25
	11	5	36.30	25
	11	5½	41.90	25
	11	6	47.50	25
3/4	10	1	17.20	50
	10	1¼	18.90	50
	10	1½	20.60	25
	10	1¾	22.30	25
	10	2	24.00	25
	10	2¼	25.70	25
	10	2½	27.40	25
	10	2¾	29.10	25
	10	3	30.80	25
	10	3¼	32.50	25
	10	3½	34.20	25
	10	3¾	35.90	25
	10	4	37.60	25
	10	4½	41.00	25
	10	5	44.40	25
	10	5½	51.20	25
	10	6	58.00	25
	10	6½	64.80	25
	10	7	71.60	25
	10	7½	78.40	25
	10	8	85.20	25
7/8	9	1	21.50	25
	9	1¼	24.00	25
	9	1½	26.50	25
	9	1¾	29.00	25
	9	2	31.50	25
	9	2¼	34.00	20
	9	2½	36.50	20
	9	2¾	39.00	20
	9	3	41.50	20
	9	3¼	44.00	20
	9	3½	46.50	20
	9	3¾	49.00	20
	9	4	51.50	20
	9	4½	56.50	20
	9	5	61.50	20
	9	5½	66.50	20
	9	6	71.50	20
	9	6½	81.50	20
	9	7	91.50	20
	9	7½	101.50	20
	9	8	111.50	20
	9	8½	121.50	20
	9	9	131.50	20
1	8	1	40.00	20
	8	1¼	44.30	20
	8	1½	48.60	20
	8	1¾	52.90	20
	8	2	57.20	20
	8	2¼	61.50	20
	8	2½	65.80	20
	8	2¾	70.10	20
	8	3	74.40	20
	8	3¼	78.70	20
	8	3½	83.00	20
	8	3¾	87.30	20
	8	4	91.60	20
	8	4½	100.20	20
	8	5	108.80	20
	8	5½	117.40	20
	8	6	126.00	20
	8	6½	136.00	20
	8	7	146.00	20
	8	7½	156.00	20
	8	8	166.00	20
	8	8½	176.00	20
	8	9	186.00	20

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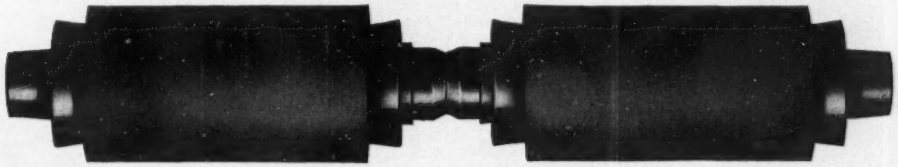
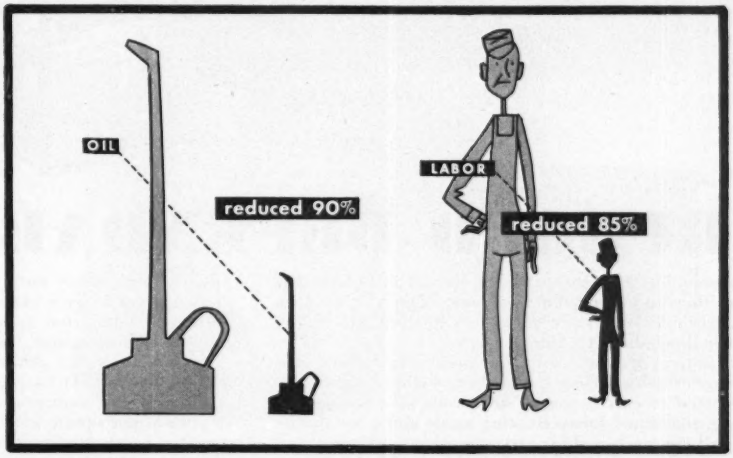
S-L-T NEEDLE BEARING TOP ROLL

FOR ROVING AND SPINNING



More than 450,000 have been installed.

Every mill should try out at least one frame of these S-L-T Top Rolls. We have a special plan which makes this possible on a very economical basis.



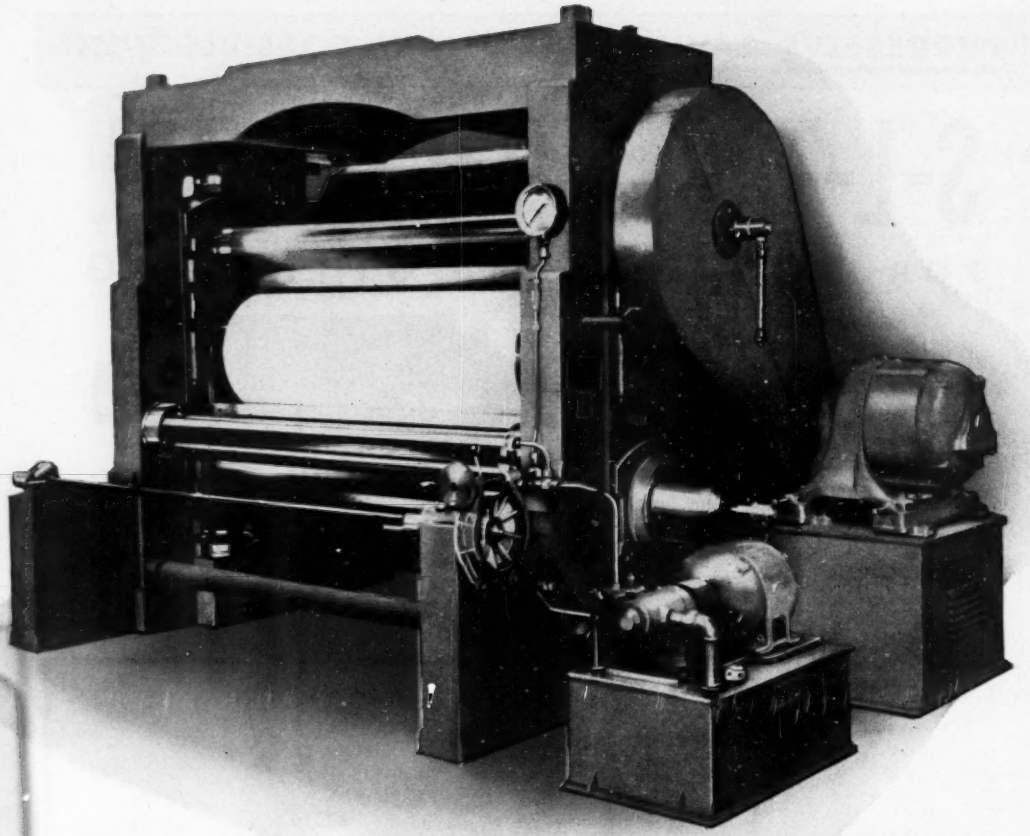
S-L-T TOP ROLLS are manufactured by THE TORRINGTON COMPANY, Torrington, Conn., and are available exclusively through

SACO-LOWELL

60 BATTERYMARCH STREET, BOSTON 10, MASS.

Shops at BIDDEFORD, MAINE and SANFORD, N. C.

SALES OFFICES CHARLOTTE • GREENVILLE • ATLANTA



RUGGED DEPENDABILITY

Nowhere does massive sturdiness pay off in satisfaction more than in a heavy-duty calender. The V.V. 80 Ton Hydraulic Calender is well known to the trade for its rugged dependability. Here's why:

In design, workmanship and materials nothing has been overlooked. Heavy cast, box section frames are connected to cast iron and steel cross girts with close fitting, machined faces. Bearing guide slides for calender roll are machined for correct working surface.

Top and bottom rolls are chilled iron 16″ and 20″ in diameter—turned, ground and polished. Both are bored with chambers for steam heating. Intermediate roll, 22″ in diameter, is of selected, seasoned and bonded cotton, pressed on hammer-forged steel shaft with hammer-forged steel heads.

Bearings are heavy duty, spherical, roller type.

Lubrication is by a circulating oil system, giving a continuous flow from reservoir through bearings to pump and filtering unit, back to reservoir.

New design, using piston rings instead of packing, eliminates down time for repacking. Piston diameter has been enlarged to maintain 80 ton nip pressure with only 770 pounds per square inch oil pressure instead of 2000 pounds as previously required.

Totally enclosed, two stage hydraulic pump is directly connected to motor. Extremely large self-aligning spherical roller bearings mean a great saving of power, enabling a 25 h.p. motor to supply ample power to drive the machine at 75 yards per minute. Standard widths are 65″ and 70″.

VAN VLAANDEREN *You are invited to see this machine.*

MACHINE COMPANY

370 Straight Street, Paterson 3, New Jersey

Cable Address: VANMACH, Paterson, N.J.

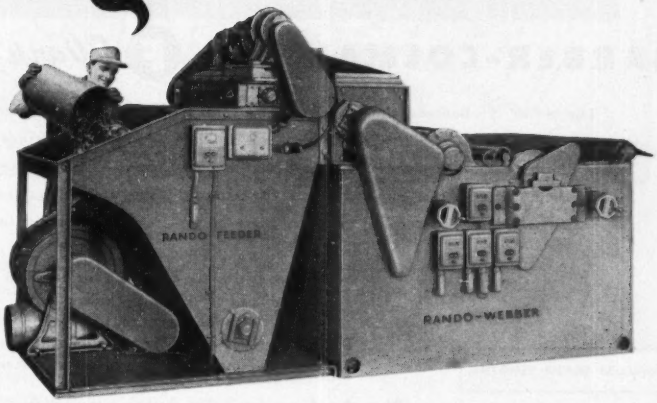
World's largest manufacturer of machinery for preparation of fabrics

WASTE?...

Not Necessarily

YOU CAN TURN THESE FIBERS INTO PROFITABLE PRODUCTS WITH

RANDO-FEEDER* AND RANDO-WEBBER*



*T.M. CURLATOR CORP. ROCHESTER, N.Y.

Many new products... *not necessarily textile*... are being developed from random webs produced by the Rando-Feeder and Rando-Webber from waste fibers. Excellent results are *also* being obtained with non-textile waste materials when used in conjunction with textile fibers. Yes, it will pay research and product minded people to look into these new developments. Write today.

TEXTILE DIVISION
CURLATOR
CORPORATION
ROCHESTER 10, NEW YORK

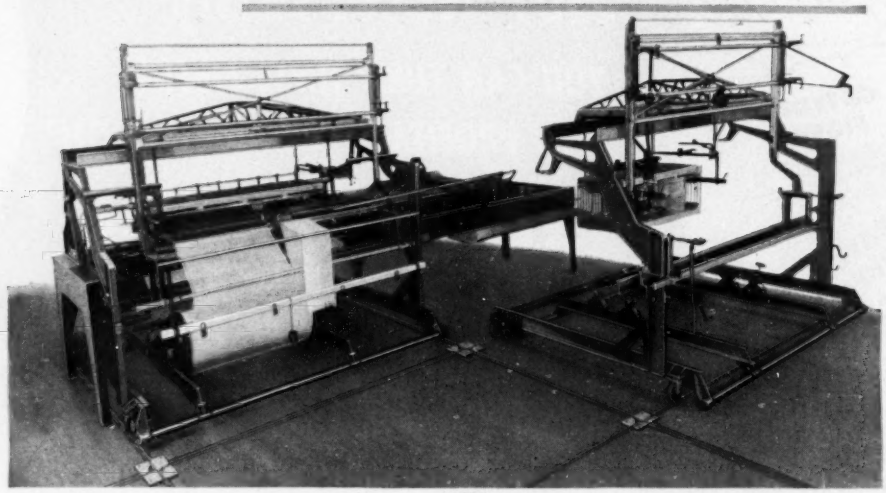
Curlator Corporation, Textile Division
571 Blossom Road, Rochester 10, New York

- ☐ Please schedule a demonstration
- ☐ Please make up samples from my own waste
- ☐ Please send Random Web Bulletin 101

NAME .....
COMPANY .....
ADDRESS .....
CITY .....

BARBER COLMAN

FASTER REPLACEMENT
STRAIGHTER WARPS
LOWER COSTS



BARBER-COLMAN MODEL F *Warp Drawing Machine*

The Model "F" Barber-Colman Warp Drawing Machine is designed for mills which have a combination of cam and dobby loom work. This particular model is useful to mills that employ 14 to 18 harness shafts or less, with 8 or less banks of warp stop motion. Any mill weaving gingham, shirtings, dress goods and suitings will find this machine exceptionally useful, especially if quick change-overs in style and pattern are common. This model answers a variety of needs in your warp replacement scheme.

Field reports show up to 3000 Ends per Hour
Draws warps from 10 to 300 ends per inch
Draws from flat sheet or 1 x 1 lease
Draws from single or double beam, or split sheet
Draws 1 x 1 lease in double beam or split sheet

Warp threads are drawn through drop wires, heddles and reed
IN ONE OPERATION
from any predetermined draft

HARNESS FRAME LENGTHS	
Size of Machine	Maximum Overall Length of Harness
48	54"
66	72"
86	92"

MODEL "F" MACHINE CAPACITIES
The Model "F" can be furnished in the following capacities at no difference in cost:
Reed, 14 Harness, 8 Banks of Drop Wires
Reed, 16 Harness, 6 Banks of Drop Wires
Reed, 18 Harness, 4 Banks of Drop Wires
DROP WIRE CAPACITY: 9/32" through 3/4" wide

WILL DRAW
- Cotton Yarns
- Filament Yarns
- Spun Yarns
- Woolens and Worsteds
- Monofilaments

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • DRAWING-IN MACHINES

BARBER-COLMAN COMPANY
ROCKFORD • ILLINOIS • U. S. A.
FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U. S. A. MANCHESTER, ENGLAND MUNICH, GERMANY

"HEY, SI, GO LIGHT ON THE ACID ON THE NEXT BATCH, WILL YA?"

SEYCO Products

WARP SIZING

- Softeners
- Binders
- Penetrants
- Ty-In Penetrants
- Shuttle Dressing

WET PROCESSING CHEMICALS AND AUXILIARIES

- Dye Assistants
- Penetrants
- Rewetting Agents
- Sanforized Fabric Oils
- Detergents
- Scouring Agents
- Softeners

NIAGARA TWIST-SETTER

- Yarn Conditioning Penetrants

STRICT QUALITY CONTROL is one of the important reasons why so many mills depend upon SEYCO for high grade, uniform chemicals and assistants.

SEYCO Products are carefully controlled from raw material selection through manufacture to final inspection of each drum before shipment.

HEADQUARTERS FOR TEXTILE CHEMICALS

SEYDEL-WOOLLEY & CO.

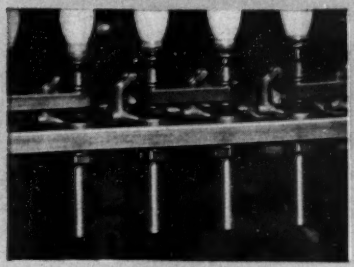
TEXTILE CHEMICALS

148 RICE STREET • ATLANTA, GA.

PENETRANTS • SIZING • SHUTTLE DRESSING • SOFTENERS • ALKALIS • TWIST SETTER MACHINES •

SEYCO

LESS FRICTION

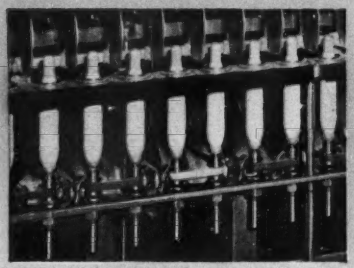


CUT BOLSTER WEAR up to 2/3!

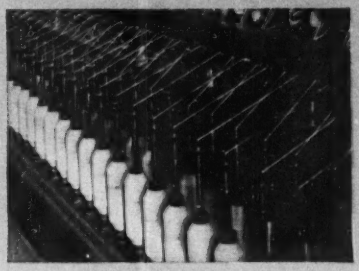
SAVE ON POWER COSTS TOO!

SINCLAIR

LONG BOLSTER LIFE

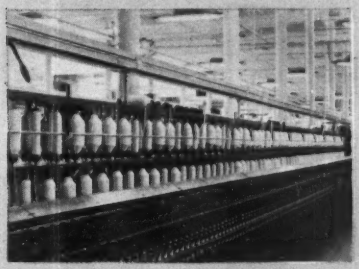


LESS THREAD BREAKAGE



Mill records show that bolster wear may be cut as much as two-thirds by using Sinclair LILY WHITE Oil. This means long bolster life, fewer replacements — low maintenance cost. Also, eliminating package wobble caused by wear reduces thread breakage, gives better assurance of uniform quality of production and maximum output.

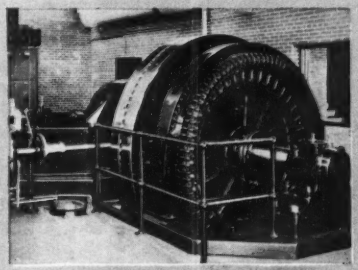
HIGH QUALITY PRODUCTION



Another important advantage of reduced bolster wear is that power costs go down, too. For less wear means less frictional drag. And this lessened drag, multiplied by the number of spindles in the mill, can amount to a big saving in power requirement and cost.

Sinclair LILY WHITE Oils, AX, BX, and CX are specially compounded for low friction loss and lowered power demand. They wash out readily. They are also effective rust preventives.

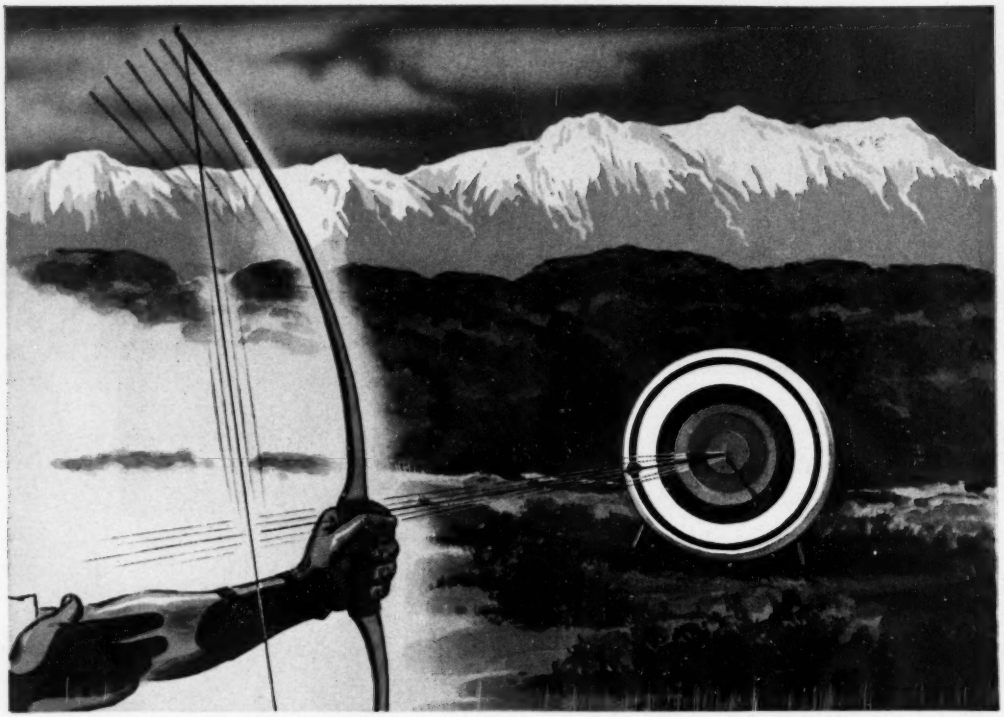
LOW POWER COSTS



To save wear *and* power, use Sinclair LILY WHITE Oils.

LUBRICANTS for the textile industry

For lubrication counsel, see your nearest Supplier of Sinclair Products or write to Sinclair Refining Company, 630 Fifth Avenue, New York 20, N. Y.



FLEXIBILITY SCORES

It's the flexibility and resilience of the bow that sends the arrow straight to the mark, and gives you a bull's eye.

And it's flexibility in a de-sizing agent that makes a difficult finishing job easy. That's the reason bleachers and dyers chalk up a high score for Diastafor brand de-sizing agent—Type L.

The variables that are present with almost every lot of goods coming to your mill bring problems to the men in charge of finishing operations that demand the utmost in skill and equipment.

In dealing with these variables they know the special value of an all-purpose de-sizing agent like Diastafor—Type L, which works well under so many different conditions.

Diastafor—Type L helps you score a bull's eye, even on your hardest lots, because of its workability in a wide range of temperatures. It will give good results in a wide pH range as well.

Diastafor is easy to use, it's economical, it's dependable. It will give you a fine "hand" whether you are working with cottons, rayons or mixed goods. It is kind to your fabrics, too. Tensile strength is never impaired. Diastafor gives you the finish you need for even dyeing, with no streaks or blemishes. It works well in the continuous process.

Our sales and technical staffs are always glad to give special assistance on de-sizing problems when their services can be helpful. Write Standard Brands Incorporated, *Diastafor Department*, 595 Madison Avenue, New York 22, New York.

DIASTAFOR

A TRADE MARK OF STANDARD BRANDS INCORPORATED

"Successful merchandising demands quality knitting."

says MISS MARY CAHILL, Hosiery Buyer, Emery Bird Thayer, Kansas City

"Anticipating the customers' desires in hosiery requires not only a complete knowledge of styling and color trends, but the realization that good knitting insures quality in hosiery. Changes in styling and color encourage the purchase of more stockings, but good quality, assuring long wear, is the factor that makes the customer a permanent one. The good will of the community and the merchandising figures of your department depend on the permanent customer."

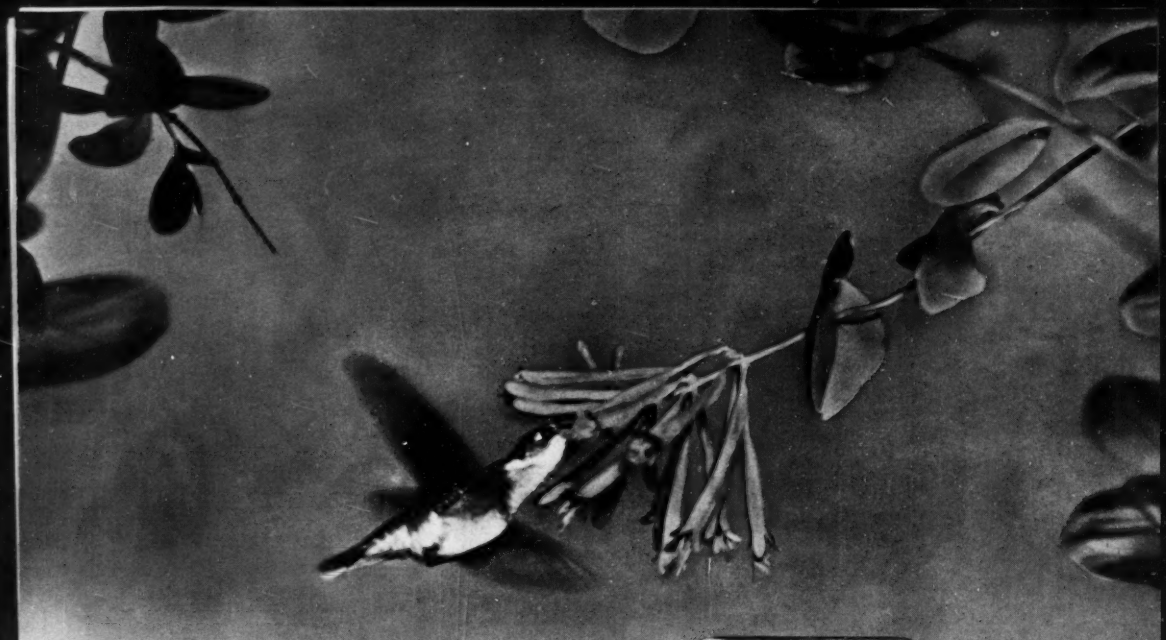
You can help to insure the good quality of your merchandise by always specifying

TORRINGTON

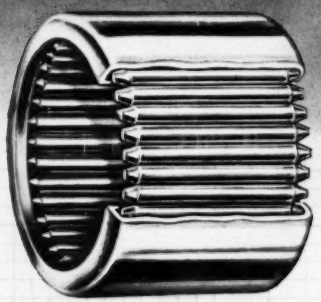
SPRING BEARD NEEDLES · SINKERS · DIVIDERS · SPLIT DIVIDERS

THE TORRINGTON COMPANY, Torrington, Conn., U. S. A.
Established 1866

Branches: New York • Philadelphia • Chicago • Greensboro, N. C. • Boston • St. Louis
Toronto, Can. • *Pacific Coast Representative:* E. G. Paules, 1762 West Vernon Ave.,
Los Angeles 37, Calif. Broadgate House, 7-10 Eldon St., London E. C. 2, England



compact...



Torrington Needle Bearings fit in tight places. These efficient units have the smallest O.D. in relation to radial load capacity of any anti-friction bearings.

This combination of compact size and high capacity has proved an important design advantage from the standpoint of space-savings and weight reduction. Products utilizing Needle Bearings are models of simplicity and efficiency.

If *your* application requires compactness coupled with high capacity, get acquainted with Torrington Needle Bearings. We'll be glad to help you adapt them to your specific needs.

THE TORRINGTON COMPANY

Torrington, Conn. • South Bend 21, Ind.

District Offices and Distributors in Principal Cities of United States and Canada

TORRINGTON *NEEDLE* BEARINGS

NEEDLE • SPHERICAL ROLLER • TAPERED ROLLER • STRAIGHT ROLLER • BALL • NEEDLE ROLLERS

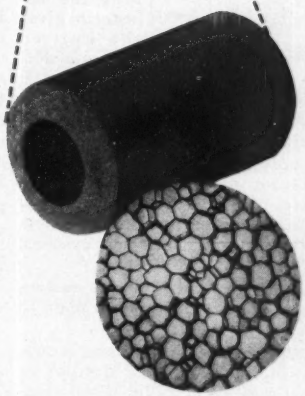
You can't beat this cot for good spinning

Satisfied mill owners using Armstrong's Cork Cots all tell us the same thing . . . cork gives them the most efficient spinning surface they have ever put on their rolls.

They agree that an Armstrong's Cork Cot spins strong, uniform yarn even on the finest counts. It will run for months without slicking and then needs only a light buffing to keep it spinning like new. On most counts and types of yarn, an Armstrong's Cork Cot will last two or more years. During this time, it banishes eyebrows from the frame. For good spinning, there's nothing like it in the opinion of these mill men.

In terms of its spinning qualities, such a cot should be expensive. The truth is an Armstrong's Cork Cot has lowest first cost of any roll cover made today. It saves on roll shop costs, too. It's formed in a seamless tube and preglued at our factory. It slips on the roll in one simple operation.

Try Armstrong's Cork Cots in your own mill. We'll be glad to help you set up a test installation. Just call your Armstrong representative today or write Armstrong Cork Company, Textile Products Department, 3606 Arch Street, Lancaster, Pennsylvania. Available for export.



The secret of cork's fine spinning surface Here magnified 1200 times are the tiny cork cells that give an Armstrong's Cork Cot its superior high-friction surface. As the yarn passes under the cot, millions of these cork cells act like microscopic suction cups. They keep that firm steady grip so important to top-quality spinning.

ARMSTRONG'S CORK COTS

for high-quality spinning . . . at low cost

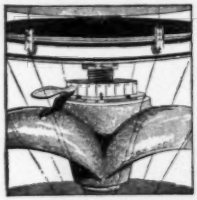
Knitting News

SUPREME ANNOUNCES NEW SUPER-RIBBER

NEW SUPREME RIBBER UTILIZES LATEST TECHNICAL ADVANCES TO GIVE TREMENDOUS PRODUCTION AND QUALITY BONUS

Before buying his next machine, the ribbed cloth knitter should see how Supreme's new machine, the Model SR, will improve quality and increase production. Some of the advantages and mechanical features which make this machine an outstanding production unit are listed below.

Some Of The Model SR's Design Features And Exclusive Knitting Advantages



1. A single action, micromatic, dial-elevating and lowering adjustment gives the knitter accurate and uniform stitch adjustment at the flip of a finger. Knit as tight or loose a stitch as desired.

2. Sturdy, dogless, tripod construction eliminates pinch lines and insures positive alignment of all elements at all times. Simplified and instantaneous synchronization of dial to cylinder needles.

3. An exclusive, new, simple method for speedily converting from plain to swiss rib.

4. Individual, channeled cams of substantial thickness lock needles in proper position at all times and eliminate possibilities of smash-ups. The knitter can remove a section for inspection and cleaning and replace it without having to realign needles by hand. The thickness of the cams provides large bearing surface for long wear, permits easier cleaning and assures less accumulation of dirt and lint.

5. Large open areas around cylinder and dial assure easy cleaning, inspection and maintenance. Greater space between knitting feeds allows quick and easy access to cloth and needles at knitting level for simple pick-up and cleaning.

6. The SR can knit a wide range and variety of yarns from extremely coarse to extremely fine with uniform quality and with a minimum of adjustments. Weak or slubbed yarns will not cause damages or interrupt production.

7. Produces cloth of high elasticity. This assures better shape retention after processing and subsequent washings.

8. Automatic control insures uniform cloth roll size. Machine stops automatically when predetermined roll size is completed.

9. Roller bearing thrust for entire center drive. Overhead gear-driven dial with center spindle of special alloy steel, hardened and ground for long wear and trouble-free operation.

The New Supreme Model SR will be available in the following sizes:

7"—10 Feeds	14"—20 Feeds	21"—30 Feeds
8"—12 Feeds	15"—22 Feeds	22"—32 Feeds
9"—12 Feeds	16"—24 Feeds	23"—34 Feeds
10"—14 Feeds	17"—24 Feeds	24"—36 Feeds
11"—16 Feeds	18"—26 Feeds	26"—38 Feeds
12"—18 Feeds	19"—28 Feeds	28"—42 Feeds
13"—18 Feeds	20"—30 Feeds	30"—44 Feeds

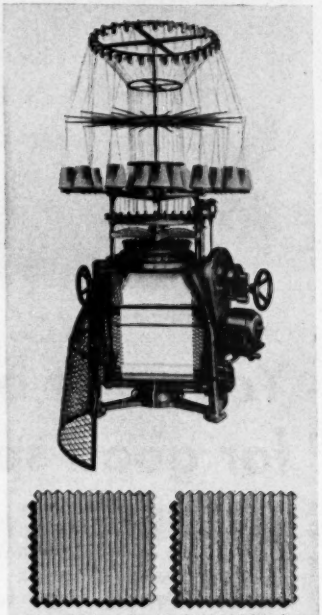
Supreme's Proven-In-Use Features Help Give New Ribber 32 Yard Per Hour Output Rate At 100% Efficiency

Supreme's entirely new line of high-speed circular rib knitting machines includes many of the revolutionary production-improving features which have made Supreme's circular jersey machines so successful.

These production-boosting features include:

● *Stationary Yarn Stand* — Permits greater RPM of the cylinder, dial and knitting elements system; lets the knitter use double cone system with "pig-tail" double tieups. Assures faster stopping and starting . . . greater safety and efficiency.

● *Revolving, Floating Take-Up and Roll-Up*—Interwinding, roller-bearing supported. Uniform tension assures large, even and compact cloth rolls. Independent support prevents wear on cylinder and outer ring.



Two of the many types of ribbed fabric for underwear and outerwear that can be produced on the Model SR. Shown above is the 21"-30 feed Model SR.

● *Unit Motor Drive* — Rugged, smooth-running. Patented multi-disc clutch gives almost instant start and stop. No slippage. Smooth, silent chain drive unaffected by lint or dust. SK-139

Write for further information and free cloth samples or ask for a factory demonstration of new Supreme SR.

Knitters who want to see the SR in action can do so by making an appointment to come to Supreme's plant. Simply write, wire or phone to let Supreme know when it will be convenient for you to come, and an appointment will be arranged.

SUPREME
KNITTING MACHINE CO., INC.
107 JOHNSON AVE. BROOKLYN 6, NEW YORK, N. Y.

HOW TO GET *BETTER* POTATO STARCH

STATE OF MAINE
A perfect combination of finer flavor, nutritious food values and economy
POTATOES
MORNING STAR
NESTACO
STATE OF MAINE
Largest selling potatoes in America. There's a reason for their great popularity
POTATOES

NOW you can buy *pure, clean, white* Potato Starch *with confidence,* from ONE big dependable source! And you can finally overcome all danger of short or constantly interrupted supplies, quality variations and unreasonable price fluctuations. Simply specify AROOSTOOCRAT and NESTACO Brands of Potato Starch. MORNING-STAR, NICOL, INC. can now offer the *entire output* of THREE mills . . by far the largest production of high grade Potato Starch in Aroostook County, Maine! Better still, you'll get the finest *uniform* quality and in sufficient quantities to meet the largest requirements. Our capable technical service staff will gladly lend you every possible aid on Potato Starch problems.

SEND FOR new Aroostoocrat and Nestaco Potato Starch descriptive folder and product information bulletin. This factual literature contains complete technical data and other pertinent information on these fine brands of Potato Starch.

FREE CONSULTING SERVICE

***SEND FOR** our Dry Dextrine or Starch Product Operation Data Sheet. Fill in and return it promptly. Our laboratory staff will gladly study your requirements and promptly recommend the one best and most economical formula for the specific operation you describe. This valuable laboratory service does not cost you one penny! Take advantage of it NOW!*

ESTABLISHED 1851

Morningstar

SCIENTIFIC DEXTRINE AND STARCH PRODUCT SERVICE

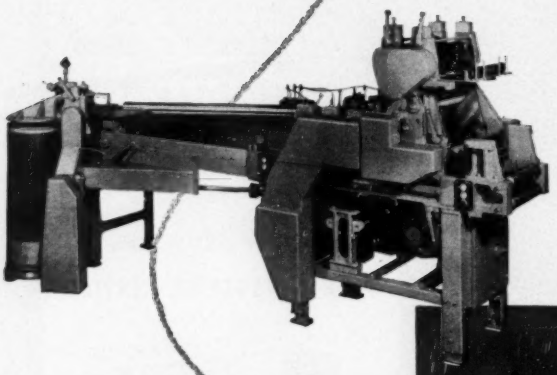
MORNINGSTAR, NICOL, INC.

630 WEST 51st STREET
NEW YORK 19, NEW YORK

1770 CANALPORT AVENUE
CHICAGO 16, ILLINOIS

two machines that give you

More yarn with less wool



• With wool scarce and its cost soaring rapidly, the Converter and Pin Drafter are more important than ever to you.

By blending synthetic tow with wool they enable you to meet today's huge demands for top quality fabrics by supplying the large quantities of accurately blended sliver necessary. Further reduced, this sliver can be woven into a wide variety of fabrics that are stronger, longer lasting, shrinkproof, and a great deal less expensive.

For more details call in our Field Engineer in your territory, or write The Warner & Swasey Company, 5701 Carnegie Avenue, Cleveland 3, Ohio.

WARNER & SWASEY-PACIFIC CONVERTER

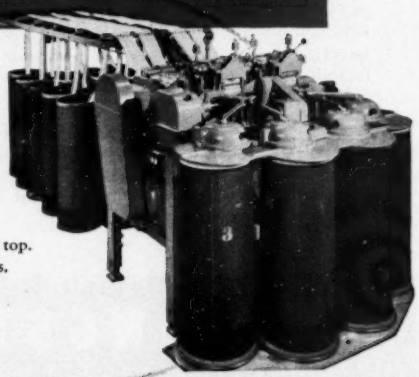
- Eliminates opening, mixing, carding, and combing operations of cut staple.
- Cuts continuous tow to desired lengths.
- Exact percentages of blends.
- Cuts costs on machines, labor, maintenance.
- Less change-over time.

In combination, or used separately in your present system, these machines will give you more production at less cost

Branch Offices:
Rivulet Mill, Uxbridge, Mass.
6910 Market Street, Philadelphia, Pa.
Candler Building, Atlanta, Ga.

WARNER & SWASEY PIN DRAFTER

- Eliminates costly steps in preparation of sliver for spin.
- Better, more evenly blended sliver in greater volume.
- Less fly waste.
- Uses either can sliver or ball top.
- Applicable to various systems.

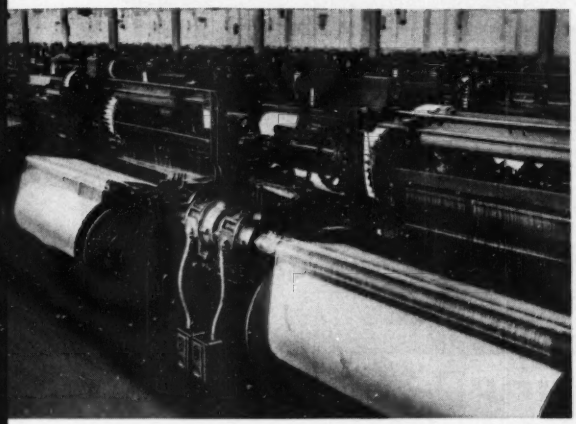


WARNER & SWASEY
Cleveland
TEXTILE MACHINERY DIVISION

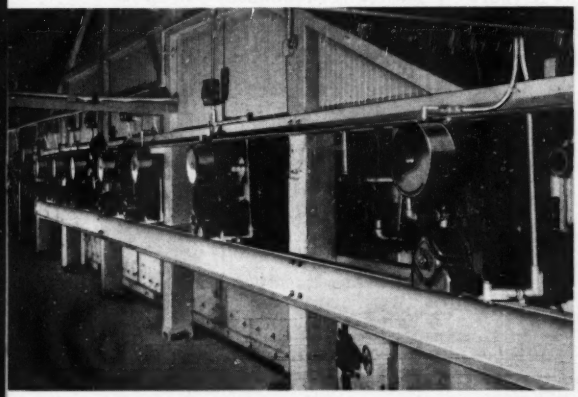
YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS . . . WITH A WARNER & SWASEY

CUTLER-HAMMER

MOTOR CONTROL FOR THE TEXTILE INDUSTRY



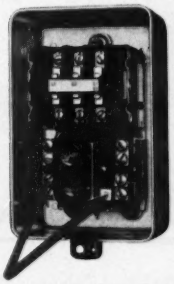
for a **LARGE GEORGIA MILL.** Cutler-Hammer Loom Switches mounted on double pedestals in the weave room of a well known Georgia mill.



for **EDDYSTONE.** Cutler-Hammer Dancer Roll Rheostats and Transfer Switches are used on soaper range in this great Pennsylvania textile mill.

CUTLER-HAMMER EUTECTIC ELEMENT OVERLOAD PROTECTION

One of the most ingenious and useful inventions of all time, Cutler-Hammer Eutectic Element Overload Protection accurately duplicates, measures and responds to heating effect produced within the motor. The world's most widely used and the world's most dependable motor overload protection, not only permits the motor to work *closer* to capacity in all cases but to do so in perfect safety. A standard feature of Cutler-Hammer Control.

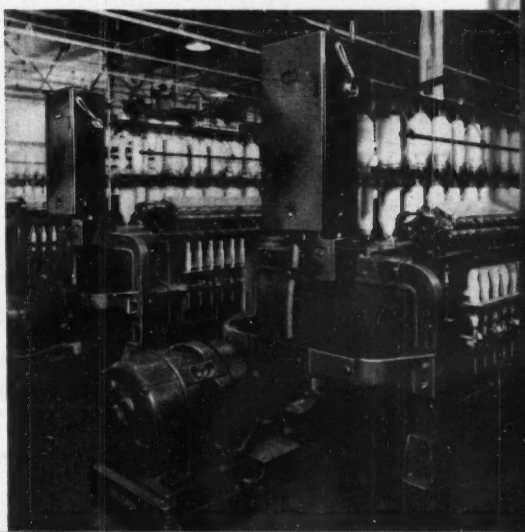


Two things wise management selects carefully

What a foreman is to a crew of workmen, Motor Control is to motors and machines. *Good* Motor Control insures that motorized machines are started properly, sees to it that these machines keep running at the peak of their productive capacities, yet prevents overloading that would lead to breakdown and exasperating, costly delays. And wise management selects *neither* Supervision *nor* Motor Control carelessly, but insists upon the best it is possible to get. 59 years of pioneering specialization in the design and construction of Motor Control has given Cutler-Hammer Motor Control a world wide reputation for performance and dependability. And whether you make exhaustive comparisons for yourself or profit by the experience of other leaders in the industry, your search for the best will lead to but one choice. CUTLER-HAMMER, Inc., 1456 St. Paul Avenue, Milwaukee 1, Wisconsin.

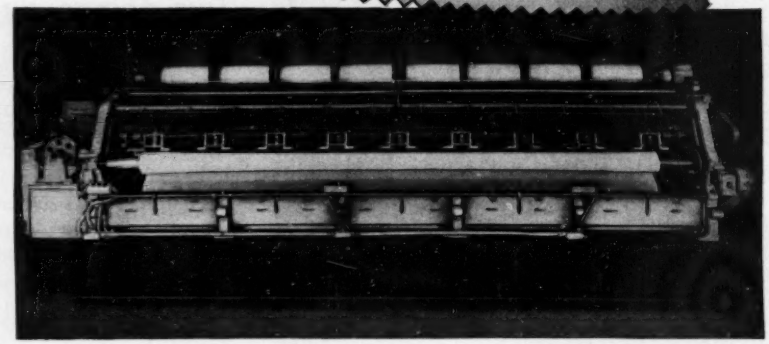
CUTLER-HAMMER
MOTOR CONTROL
C-H

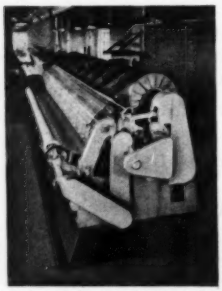
at **GREENWOOD.** Cutler-Hammer Starters and Shipper Rod Switches on motors operating these spinning frames in the Mathews Plant, Greenwood Mills.



Makes Quality Fabrics at HIGH SPEED!

Left end of machine showing enclosed gear box, pattern mechanism, motor and controls.





Right end showing continuous let-down and take-up.

. . . the NEW Kidde-Aveco Tricot Machine

You'll get improved quality in your fabrics . . . and turn them out *fast* on the Kidde-Aveco High Speed Tricot Machine.

A mechanical continuous let-down replaces the brakes for controlling beams. A new continuous take-up replaces the ratchet take-up. And . . . to minimize the periods of acceleration and deceleration, there's a high starting torque motor equipped with a quick stop. You'll find these improvements reflected in elimination of shade marks, reduction of stop marks so that they usually dress out, and in improvement of fabric quality.

Why not consider the Kidde-Aveco machine in your expansion plans? Write for complete information.

CHECK THESE FEATURES:

✓ **NEW CONTINUOUS LET-DOWN.** Easy to set and maintain because it's mechanical. Eliminates shade marks, reduces stop marks and improves fabric quality.

✓ **NEW VARIABLE SPEED DRIVE.** A turn of a hand wheel varies machine speed. No chain drive . . . no gears to be changed . . . quieter operation. Tachometer included.

✓ **NEW CONTINUOUS TAKE-UP.** Quality is established by a simple turn of adjustment screw. No gears or sprockets to be changed. No clutch. Once set, it requires no adjustment.

✓ **OTHER FEATURES.** These include improved plunger design, improved front guide bar lifting mechanism, quick-stop and jogging control.

KIDDE MANUFACTURING CO., INC.
BLOOMFIELD, NEW JERSEY

Kidde-Aveco
FOR TOP-QUALITY FABRICS

You're right, bub! Mills using HERR Conical Rings don't have to worry about seconds from oil drippings because the flow of oil to the traveler is controlled all the time.

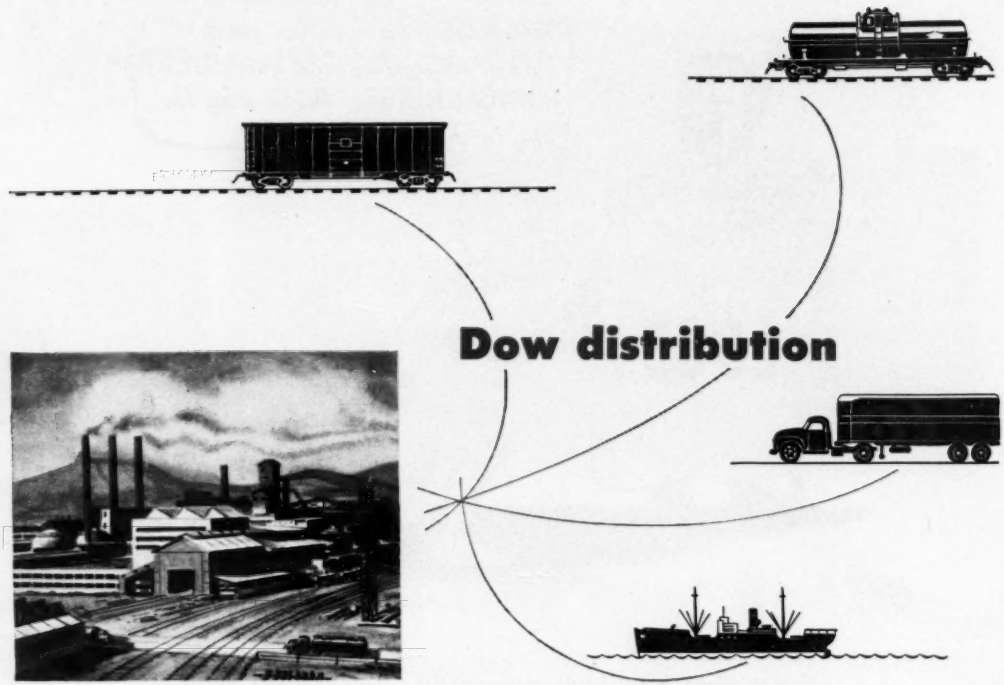
Furthermore, less oil is consumed, and added life given the traveler. And there is absolutely NO rewicking.

The special oil feature of the HERR Conical Ring is but one of several features that have been responsible for their wide acceptance the world over . . . wherever mill men insist on Quality Spinning and Twisting of Wool, Worsted, Nylon, Rayon and Blended Yarns of all types, and Cotton Twisting.

Ask for one of our representatives to call and discuss your ring problems with you.

HERR MANUFACTURING CO., INC.

318 FRANKLIN STREET **BUFFALO 2, NEW YORK**



keeps your production steady!

Dow caustic soda deliveries are set up with an eye on *your* production schedules.

For this reason, Dow maintains an outstanding network of distribution. Dow has caustic soda plants in Michigan, Texas and California. Besides shipping from these plants, Dow distributes Caustic Soda Solution from bulk tank terminals in Carteret, New Jersey and Charleston, South Carolina. Dow also distributes Caustic Soda Solid, Flake and Ground Flake from Chicago, Illinois, Port Newark, New Jersey and Charleston, South Carolina.

Dow's distribution facilities offer you constantly dependable deliveries to assure maintenance of *your* production schedules. Take advantage of them.

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN

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San Francisco • Los Angeles • Seattle

Dow Chemical of Canada, Limited, Toronto, Canada

wherever you are... you're close to

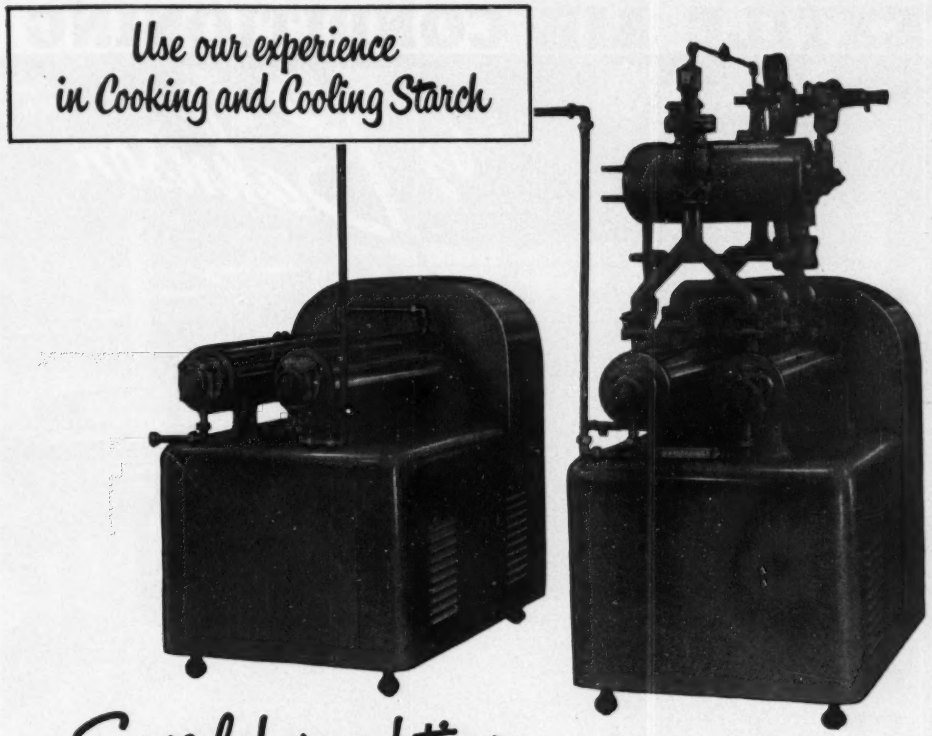
DOW CAUSTIC SODA

DOW

CHEMICALS

INDISPENSABLE TO INDUSTRY AND AGRICULTURE

Use our experience in Cooking and Cooling Starch



Save labor and time

with **Votator** printing gum processing apparatus

CONTINUOUS processing with VOTATOR Processing Apparatus –the modern method – is fast. Starch is cooked, cooled, and congealed in seconds. Thus, for the same volume, only half the floor space of comparable batch methods is required.

Operation is simple, requires a minimum of labor. In many plants, savings up to 40% in labor costs are being realized. Starch paste slurry is pumped into the unit on a continuous basis. It is mixed vigorously, heated from 80 to 200 degrees, and then cooled to approximately 45 degrees . . . *all* in about 1/30 the time required by open kettle methods.

Because of the high flow speed, only a small quantity of material is being processed at one time. Thus the starch can be heated uniformly throughout its entire mass to the desired temperature. The result is absolute uniformity in viscosity.

Continuous, *fully-enclosed* processing also eliminates spillage and slimy deposits on the floor. And with no open handling, material waste is reduced.

Send the coupon today for complete data on making your processing of printing gum more satisfactory, more economical. The Girdler Corporation, Votator Division, Louisville 1, Kentucky.

VOTATOR—T. M. Reg. U. S. Pat. Off.

THE GIRDLER CORPORATION
Votator Division

The Girdler Corporation, Votator Division
224 East Broadway, Louisville 1, Kentucky

Please send bulletin on the following:

- ☐ Printing Gum production with VOTATOR Processing Apparatus.
- ☐ Backfill production with VOTATOR Processing Apparatus.
- ☐ Warp Size production with VOTATOR Processing Apparatus.

Name .....
Position .....
Company .....
Address .....
City ..... *State* .....

TEXTILE AIR CONDITIONING

A Bahnson Central Station air conditioning system in this modern plant maintains humidity and temperature control in the cotton spinning room, but—whether processing cotton, rayon, nylon or wool, Bahnson engineers will study *your* particular requirements and recommend the Bahnson system best suited to *your* needs...

HUMIDUCT UNIT SYSTEM
CENTRAL STATION AIR WASHER SYSTEM
CENTRISPRAY AIR WASHER SYSTEM
AIR VITALIZER SYSTEM

Bahnson Engineering is based on 40 years experience in textile air conditioning and Bahnson equipment assures maximum efficiency at minimum cost.

The Bahnson Company
ENGINEERS AND MANUFACTURERS
WINSTON-SALEM, N. C.

AHCO PRODUCTS

DEEP UNIFORM ABSORBENCY

is yours

with AHCOWET RS

A SYNTHETIC SURFACE-ACTIVE COMPOUND

Here is the perfect answer to uniform absorbency for mechanically controlled shrinkage processes . . . the outstanding wetting agent for package dyeing.

Use AHCOWET RS directly in peroxide bleach baths . . . goods will be left more absorbent.

Ask for complete technical information.

ARNOLD, HOFFMAN

PROVIDENCE • RHODE ISLAND

Associated with
Imperial Chemical Industries, Ltd.
(DYESTUFFS DIVISION)
England

ARNOLD, HOFFMAN & CO., INCORPORATED • EST. 1815
Offices: Charlotte, Cincinnati, New York, Philadelphia, Providence
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AHCOWET RS

piping repairs cost more now!

No. 488 Iron Body Clamp Gate

You make them less often by using Dependable Quality

CRANE VALVES

... That's why more Crane Valves are used than any other make

easy access prevents trouble with this valve

Remove just two nuts to dismantle this gate valve for inspection, cleaning, or repairs—without taking it from the line. Reassemble just as easily, knowing that Crane clamp design keeps the bonnet joint snug and accurately aligned. Use Crane Clamp Gates on steam, water, and air, but especially in heavy fluid lines needing periodic cleanout. They'll save time, labor, and encourage regular servicing that prevents valve trouble.

Combining easy access with highly dependable service features, Crane Clamp Gates typify Crane Quality—*better valve performance at lowest ultimate cost.*

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CRANE CO., *General Offices:*
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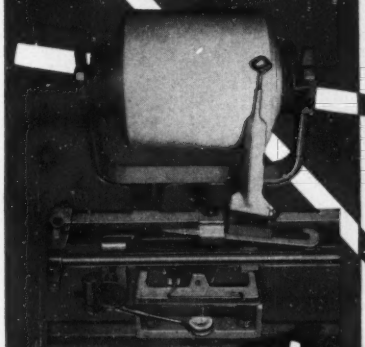
VALVES • FITTINGS • PIPE • PLUMBING • HEATING

It's a PRODUCTION FACT

with the high-speed —HEADLESS PACKAGE— U.S. ACME FACE DRIVE —TWISTER—

You can

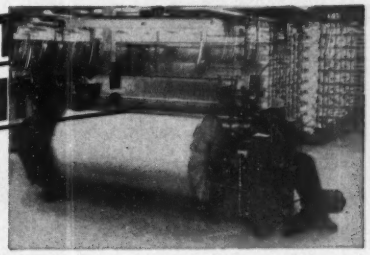
★ INCREASE PRODUCTION!
★ IMPROVE QUALITY!
★ ELIMINATE REDRAWING!
★ PRODUCE 1-lb. to 1½-lb. KNOTLESS PACKAGES!

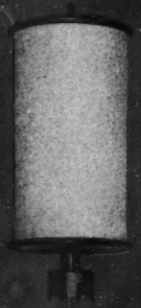


NO FLYER!

DIRECT to AUTOMATIC QUILLING or HIGH SPEED WARPING

WITHOUT REDRAWING





PRODUCTION HIGHLIGHTS

★ Twist without flyer up to 15,000 R. P. M. with balanced bobbins!

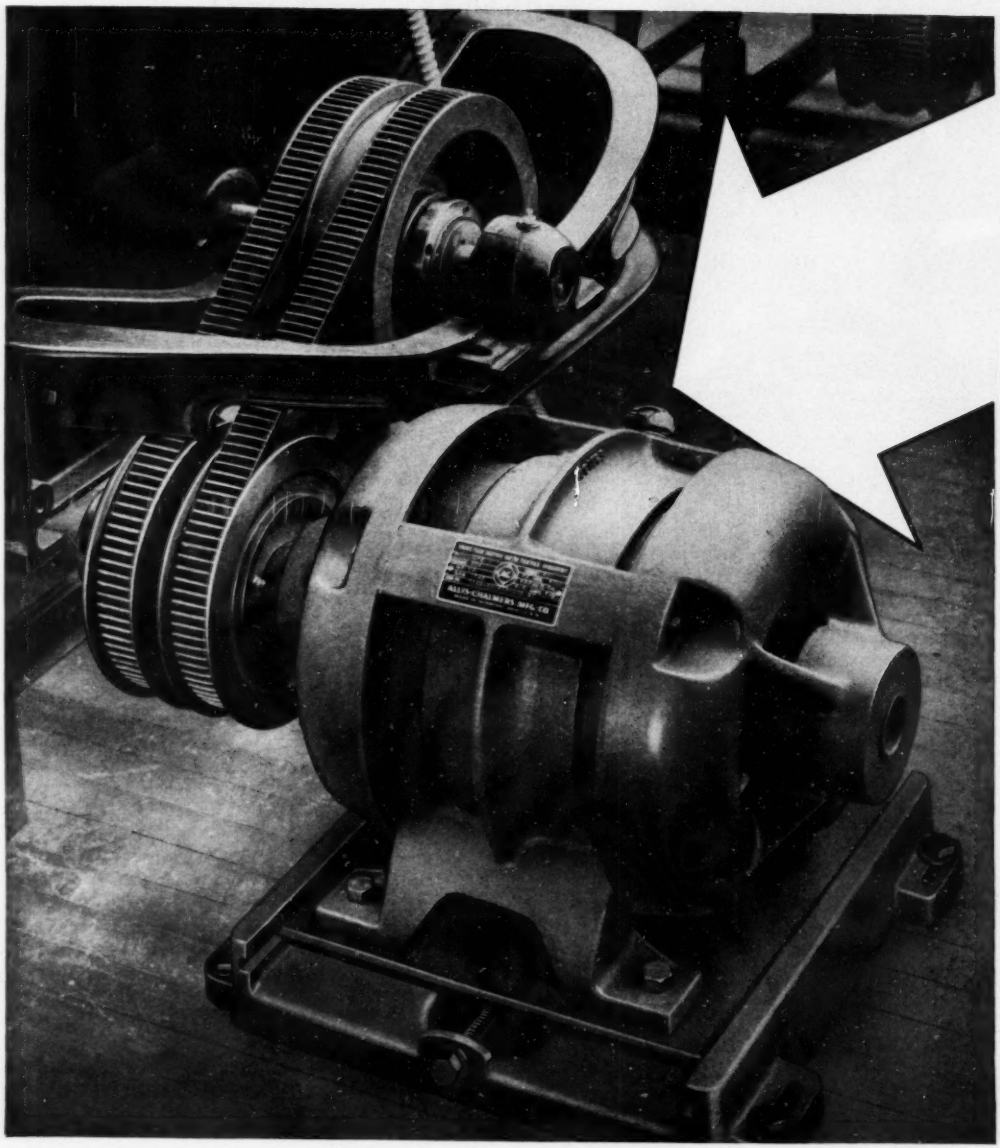
★ Combination yarns, voiles, acetates and nylon up to 35 turns per inch!

★ 178,096 spindles now in production!

Yes, it's a fact—yarn twisted on the U. S. Acme Face Drive Twister goes DIRECT to the quilling or high speed warping operation without redrawing! It's a time and cost saver, a production booster that turns out top quality knotless packages from 1-lb. to 1½-lb. WRITE FOR COMPLETE INFORMATION . . .

U. S. TEXTILE MACHINE CO.
700 GILLIGAN ST.
SCRANTON 8, PENNA.

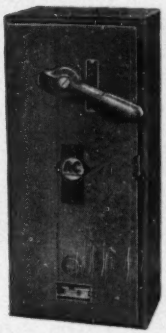
LINT IS NO PROBLEM



for This Motor

Quick-Clean TEXTILE MOTOR

Ordinary motors in lint-laden atmospheres have trouble . . . overheating — high maintenance costs — burnouts. *Quick-Clean* motors avoid these expensive troubles because lint and dirt cannot accumulate on or inside the motor.



MATCH QUICK-CLEAN MOTORS WITH ALLIS-CHALMERS STARTERS

Developed for dependable, safe starting of *Quick-Clean* motors. Other controls for all electrical equipment in your plant. For competent applications engineering, see your Allis-Chalmers Authorized Dealer or write District Office.

QUICK-CLEAN WIDE OPEN DESIGN allows powerful fans to sweep lint and dirt in, out and away with the cooling air. Interior surfaces are smooth and hard. Large air passages are contoured to aid air flow. There is no place where lint and dirt can collect.

Cast Iron Frame

The frame of the *Quick-Clean* motor is rigid cast iron which resists the corrosive action of moist mill atmospheres. Cast iron maintains perfect alignment under all normal operating conditions assuring maximum bearing life and trouble-free operation.

Factory Lubricated Bearings

Bearings are lubricated and sealed at the factory and should need no attention for years. Grease or oil cannot leak from the bearings to soil materials or collect dirt. Lint and dirt cannot enter the bearings.

Get The Facts

Your nearest Allis-Chalmers Authorized Dealer or District Office has complete information on the *Quick-Clean* motor. Or write Allis-Chalmers, Milwaukee 1, Wisconsin for the bulletins shown below. A-3396

SEND FOR FREE LITERATURE

Quick-Clean Motors - - -	51B6055
Allis-Chalmers Loom Motor -	51B7111
Texrope Drives - - - -	20B6051
Vari-Pitch Automatic Sheaves -	20B7223
Power Generating Equipment, Transformers, Circuit Breakers, Power Distribution Equipment - -	25B6150

Quick-Clean, Texrope and Vari-Pitch are Allis-Chalmers trademarks.

COMPLETE SERVICE from power line to machine

Transformers

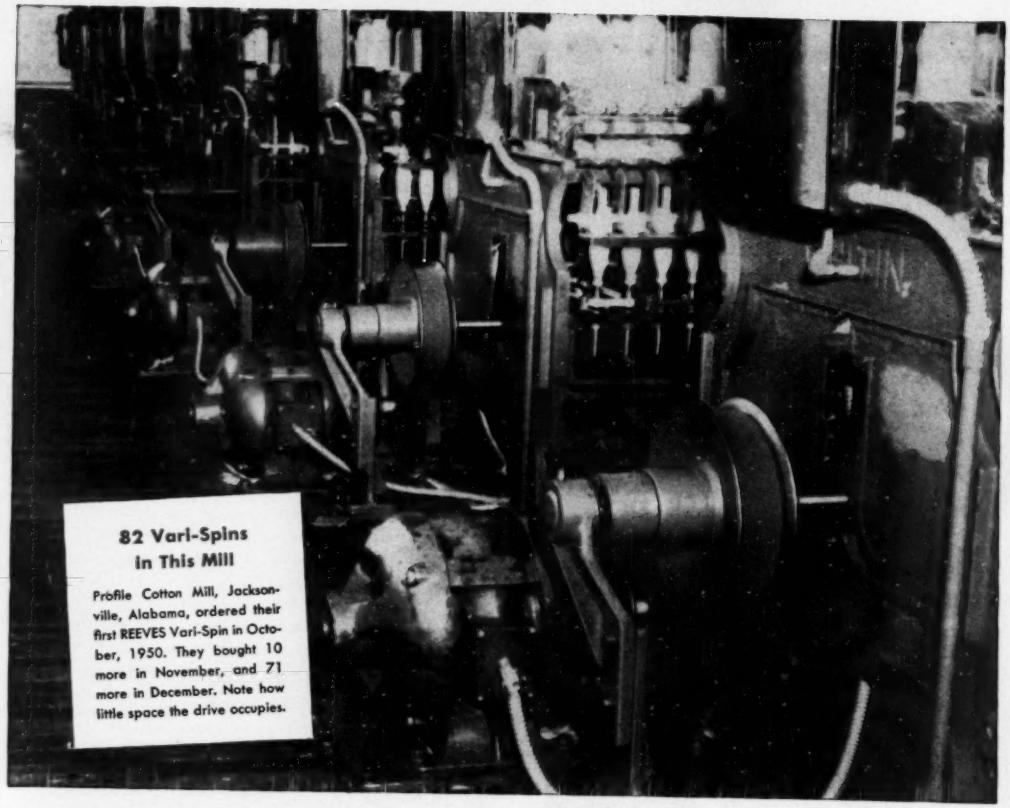
Motor Control

Motors

Texrope Drives

ALLIS-CHALMERS

Originator of the Multiple V-Belt Drive for the Textile Industry



82 Vari-Spins in This Mill

Profile Cotton Mill, Jacksonville, Alabama, ordered their first REEVES Vari-Spin in October, 1950. They bought 10 more in November, and 71 more in December. Note how little space the drive occupies.

With REEVES Vari-Spin, you change spinning speeds instantly, accurately—without stopping

Install Vari-Spin and get all these benefits:

1. The exact speed for every yarn set—even to a fraction of an rpm.
2. Immediate and positive speed changes—in 30 seconds or less—without stopping frame, and without downtime for pulley changes or adjustments. No need to maintain stock of pulleys and belts for speed changes.
3. Stepless speed adjustment anywhere within 2½ to 1 range.
4. Use your present motors—or any standard, ball-bearing, straight-shaft motors.
5. Drive requires only one belt.
6. Compactness—Vari-Spin nests into narrow aisles. Quickly and easily installed and maintained.

Write for complete information contained in Bulletin No. T 62-N.

accurate • variable
REEVES *Speed Control*

TURN OF SCREW CHANGES SPEED. Slightest speed change is instantly secured and positively maintained by turning single speed shifting screw. REEVES Drive—incorporating operating principle proved in 300,000 installations—is so positive that return to previous cylinder speed within fraction of rpm is secured.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

Recognized leader in the specialized field of speed control engineering.

SANDOZ PRESENTS *The color achievement of the month*

Blithe Blue ...BY MILLIKEN

This cheerful worsted-wool dress crepe by Milliken brightens spirits everywhere it goes.

She knows its color will stay bright — despite sun exposure — for many seasons to come, because she depends upon Milliken to have used the *very best* dyestuffs.

The *dyer* is pleased with the fine performance he gets from Sandoz dyestuffs because they are level-dyeing, and changeless in subsequent finishing operations.

To keep seconds in the dyehouse down to a minimum and to insure customer satisfaction, smart dyers are depending more and more, for colors like this, upon such Sandoz favorites as

ALIZARINE LIGHT BLUE 4GL

and the new "super-brilliant" blue —

BRILLIANT ALIZARINE LIGHT BLUE 3F Pat.

For maximum fastness to light, washing and perspiration, Sandoz has announced another brilliant blue —

BRILLIANT ALIZARINE SKY BLUE 2GS

Ask for a product sample and circular #940.50.

And for *any* chrome, acid or direct dyes . . . or auxiliary chemicals . . . for both natural and synthetic fibres . . . be guided by the successful "color achievements" you see in these Sandoz advertisements.

DIRECT DYE COTTONS AND RAYONS — GET TRIPLE FASTNESS THIS NEW WAY!

Sandoz CUPROFIX colors and after-treatment give results comparable to more expensive vat dyeing.

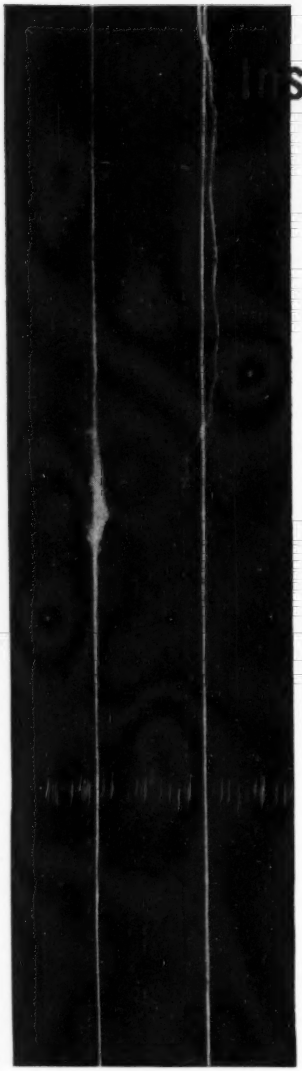
Only with CUPROFIX can you expect direct-dyed fabrics to have satisfactory fastness to *sunlight* as well as to laundering and perspiration.

Works wonders with resin-treated fabrics. Write us for new booklet on popular CUPROFIX.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N.Y.

Application laboratories and stocks at Boston, Philadelphia, Charlotte, Chicago, Los Angeles, Toronto • Other branches at Providence, Paterson and Montreal

SAND *thinks ahead with textiles*



Inspect in the Singles Ply without Doubling

—when you package your plied yarn on the Universal-Atwood "double-play" combination.

The most efficient method of processing plied yarn is to wind direct from spinning frame bobbins, inspecting the yarn in the singles . . . then ply from cones to large twister bobbins on the ring twister equipped with single end stop motions. This eliminates doubling . . . all work is done at high speed . . . twisting efficiency is improved . . . waste reduced . . . and much better plied yarn is produced.

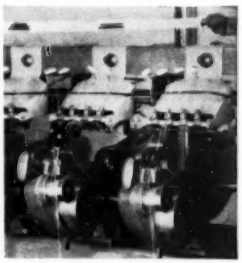
SINGLE END CONING BEFORE TWISTING REMOVES IMPERFECTIONS

On the Universal Roto-Coner*, spun rayons, spun nylons, cottons, worsteds and blends are wound at high speed, while efficient slub catchers—uniformly set and *locked* in position—remove slubs and other imperfections in the singles. The large cones are then used as overend supply for the ring twister.

SINGLE END STOP MOTIONS ELIMINATE DROP PLY

On the Atwood Model 10 Ring Twister, there is an automatic stop motion for each end in the ply. It is located *above the feed rolls*. Whenever a break or runout occurs, the spindle and feed rolls stop *instantly* and the end is caught before it reaches the feed rolls. Thus—drop ply *cannot* get into the package; nor can roller laps occur. Also—ends are tied in the singles *before* twist is inserted, resulting in smaller, less troublesome knots.

*Reg. U. S. Pat. Off.



23.0.15

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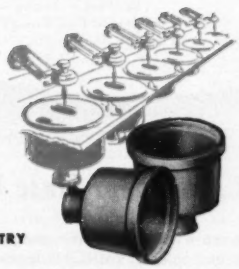
Agents in every principal textile center throughout the world

Winding and Twisting Machinery for Natural and Synthetic Yarns

ROTO-CONER* *the textile winder with the rotary traverse* | **MODEL 10** *automatic stop motion for each end and ply*

In many places in your production

micarta is basic!



TEXTILE INDUSTRY

Lap rolls, pirns, picker-sticks, shuttles . . . MICARTA® is handling more and more of these key textile jobs better and longer than either metal or wood. MICARTA is a basic material. It is lighter than aluminum . . . pound for pound this plastic has a compressive strength greater than structural steel. It cannot rust.

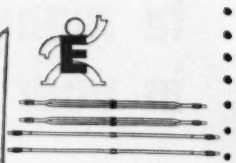
MICARTA will not fuse. It kills noise and absorbs vibration. It can be machined, formed or fabricated easier and more economically than metal.

MICARTA is part of the textile future. Explore its possibilities in your plant. Westinghouse Electric Corporation, Micarta Division, Trafford, Pennsylvania. J-06444

MICARTA is paying its way. As a basic material it can serve the textile industry in rings, separators, guide rollers, spools, bobbins, shuttles, rolls, bearings, inspection forms and tables, pulleys, picker-sticks.

In fact, wherever tough, light and even-wearing parts are a "must" to production, there you will find a place for versatile MICARTA.

SPOTLIGHTS ON LOOM HARNESS PROGRESS!



HEDDLES
Standard, Drawing-In
(Slotted and Cut-Out.)

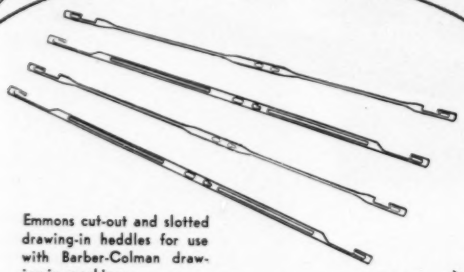
REEDS
Pitchband, All-Metal,
Carbon or Stainless Steel

WOODEN HEDDLE
FRAMES

ALUMINUM — MAGNESIUM
HEDDLE FRAMES

DRAWING-IN HEDDLES

RIGIDREED*



Emmons cut-out and slotted drawing-in heddles for use with Barber-Colman drawing-in machines.

Emmons Rigidreed: Light—Resilient — Strong — Compact — L-a-s-t-i-n-g!

*Trade-Mark Registered; Patent Applied For

EMMONS, *Leaders in Loom Harness Equipment Since 1867!*

The two new EMMONS products spotlighted here are the very latest in progressive loom harness equipment. They are perfect examples of EMMONS leadership in loom harness design and manufacture. Ask for the new EMMONS RIGIDREED catalog page.

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HENDRIK VAN BREDERODE
311 Godwin Ave., Midland Park
Phone Ridgewood 6-0760
Covering N. Y., N. J. & Penn.

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Virginia & Tennessee

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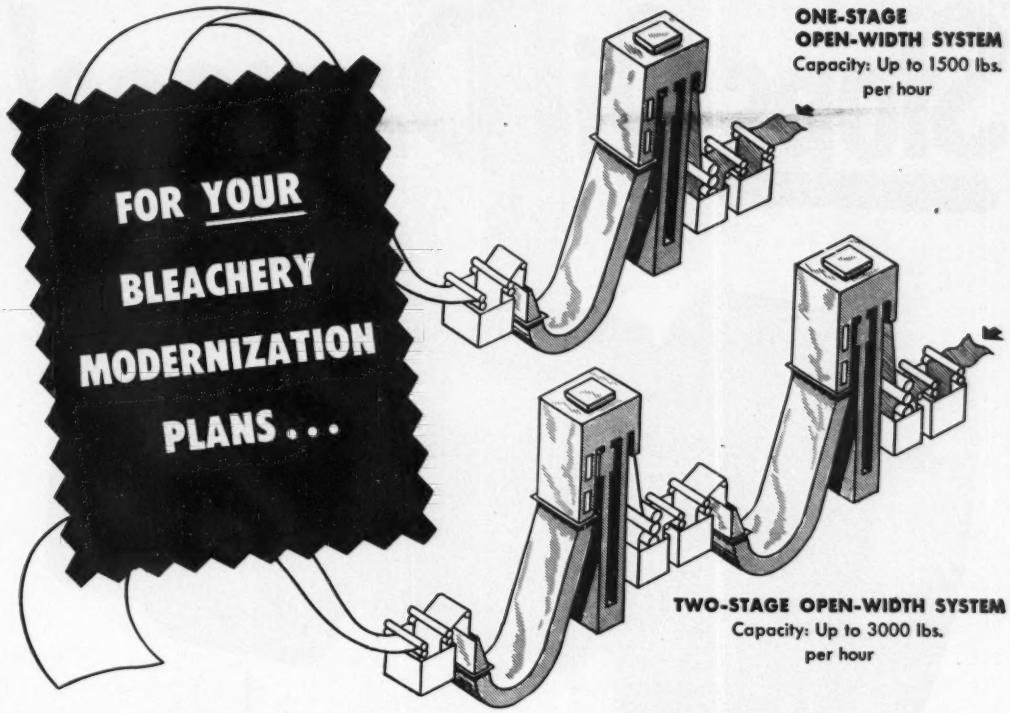
Phone L2-9451

EMMONS WEAVE ROOM EQUIPMENT

Main Office and Plant: EMMONS LOOM HARNESS CO., LAWRENCE, MASS.



Consider Du Pont Open-Width Continuous Peroxide Bleaching Systems

IF YOU PLAN to modernize your bleachery, expand production, especially for speedy, economical handling of heavy fabrics, investigate the Du Pont Open-Width Systems. They are by far the most economical units of this type developed to date.

Introduced by Du Pont in 1943, they're specifically designed to handle heavy fabrics and tightly woven goods—heavy twills, drills, poplins, etc. They speed bleaching, cut costs in chemicals, steam and maintenance. Today, 16 of these systems, incorporating Du Pont principles, are operating in a number of leading mills.

Other types of Du Pont continuous systems, with capacities from 500 to 6,000 lbs./hr., are available. In fact, capacity of Du Pont designed installations operating or under construction is now over 75,000,000 yards per week—more than one-fourth the current annual U. S. production of cotton piece goods!

Let us tell you more about these cost-saving systems. We don't build or sell the equipment. But our Technical Service can help you select the right bleaching system for your requirements of production, type of fabrics to be bleached, utilities, and other economic factors. Bleaching specialists will help you survey your production facilities, make specific recommendations on equipment, give estimates and operating costs. After you decide on a system, Du Pont Technical Service representatives located in leading textile centers will help you start operation and train your technical and operating personnel. This service in no way obligates you.

For further information on Du Pont Continuous Peroxide Bleaching Systems, send the coupon below.

Tune in Du Pont "Cavalcade of America," Tuesday nights—NBC coast to coast

DU PONT
CONTINUOUS PEROXIDE BLEACHING

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

E. I. du Pont de Nemours & Co. (Inc.)
Electrochemicals Department, Wilmington 98, Del.

Please send me more information about Du Pont Continuous Peroxide Bleaching Systems.

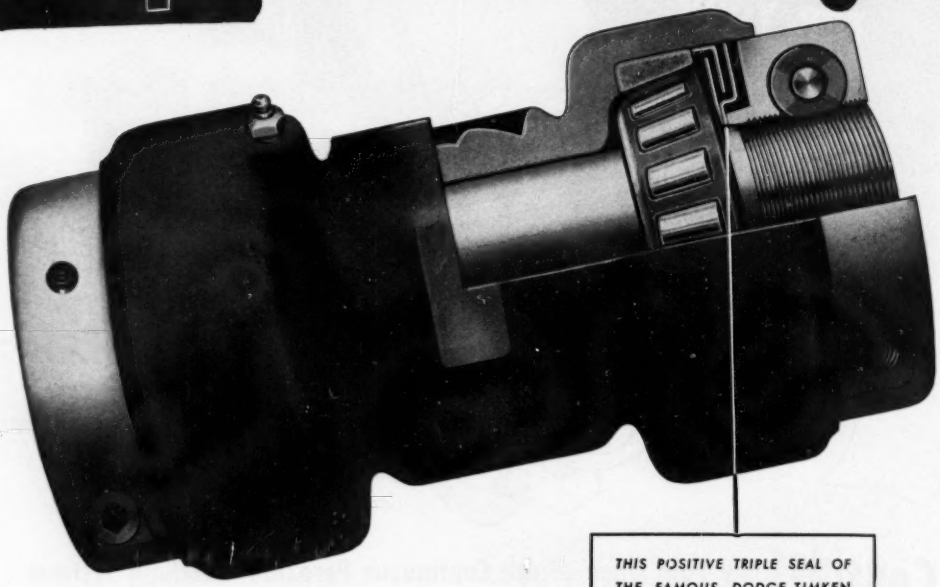
Name_____ Title_____

Firm_____

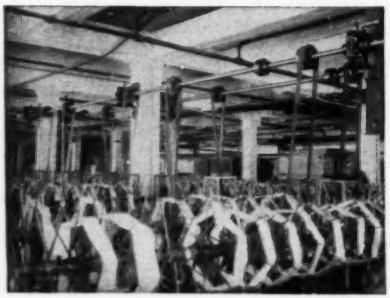
Street & No._____

City_____ State_____

Stops Oil Damage!



THIS POSITIVE TRIPLE SEAL OF THE FAMOUS DODGE-TIMKEN TYPE C BEARING ELIMINATES OIL DRIP...HERE IS THE IDEAL BEARING FOR TEXTILE MILL USE!



This installation of Dodge-Timken Hanger Bearings protects quality and profits. Special seals prevent oil leakage on the product, reduce "seconds." Bearings remain properly lubricated, saving labor.

IS OIL DRIP eating holes in your profits? To keep the lubricant where it belongs—*inside the bearing*—switch to Dodge-Timken. These famous bearings, noted throughout the world for quality, have proved themselves in millions of industry's toughest jobs.

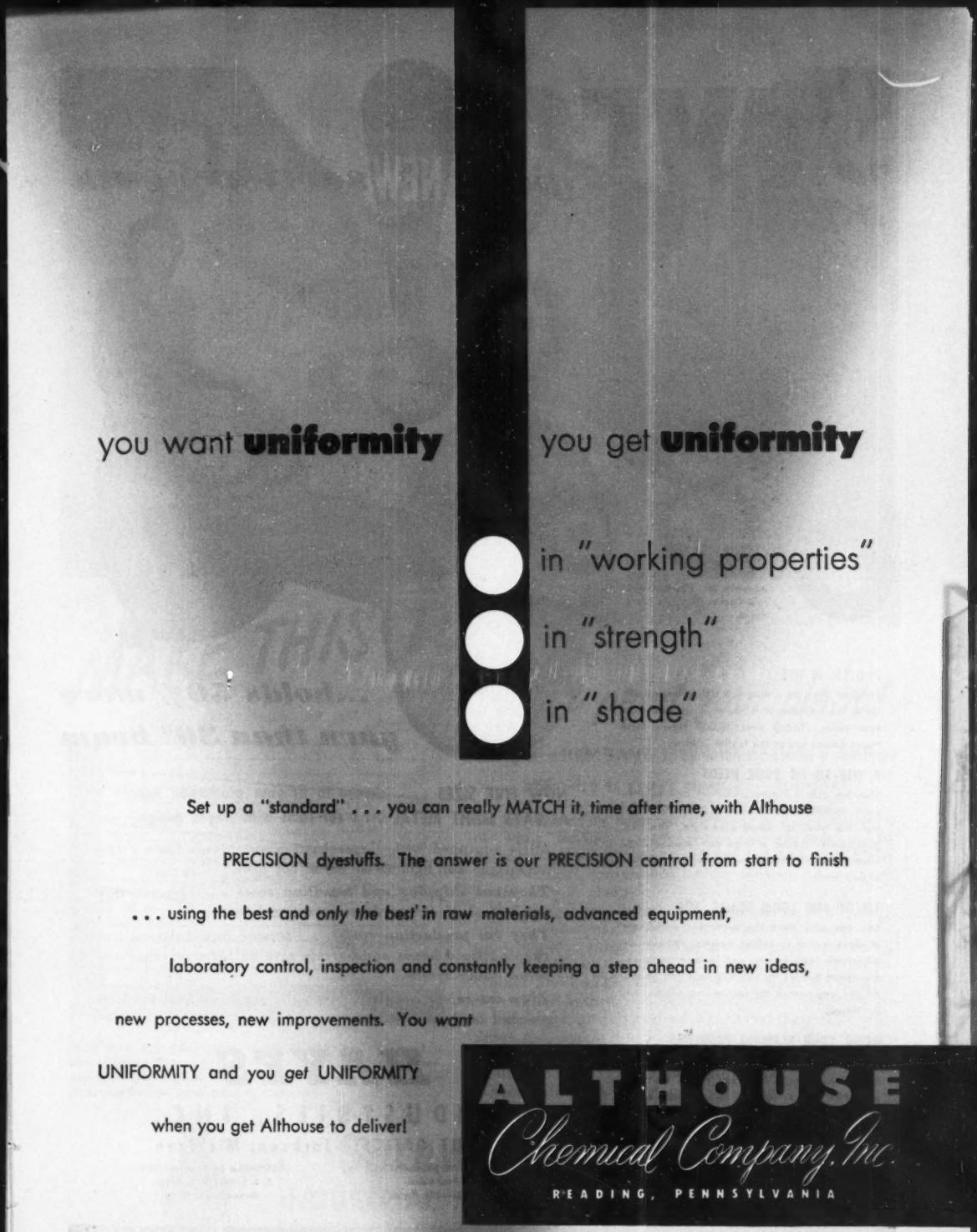
The type C Dodge-Timken Bearing is especially adapted to use in the textile field. Its indestructible steel seal positively prevents lubrication leakage—definitely cuts a mill's loss from "seconds."

Available from distributors' stocks—in shaft sizes from 1-7/16" to 3-15/16". Completely assembled, factory adjusted, pre-lubricated and ready to install on the shaft for a minimum of 30,000 hours of uninterrupted service. Call your nearest Dodge Transmissioneer. Or write us for detailed bulletin.

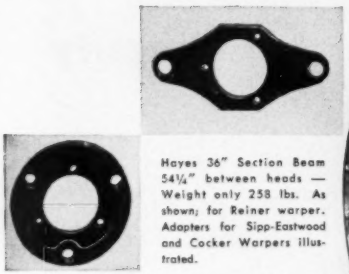
DODGE MANUFACTURING CORPORATION
3500 Union Street • Mishawaka, Indiana

CALL A DODGE TRANSMISSIONEER. He's factory-trained to help solve your power drive problems. Look for his name under "Power Transmission Equipment" in your classified telephone directory.

DODGE
of Mishawaka, Ind.


you want **uniformity**
you get **uniformity**
in "working properties"
in "strength"
in "shade"
Set up a "standard" . . . you can really MATCH it, time after time, with Althouse PRECISION dyestuffs. The answer is our PRECISION control from start to finish . . . using the best and *only the best* in raw materials, advanced equipment, laboratory control, inspection and constantly keeping a step ahead in new ideas, new processes, new improvements. You *want* UNIFORMITY and you *get* UNIFORMITY when you get Althouse to deliver!
ALTHOUSE
Chemical Company, Inc.
READING, PENNSYLVANIA
Pace-setter in precision dye-making

HAYES giant NEW section beam



Hayes 36" Section Beam 54¼" between heads — Weight only 258 lbs. As shown; for Reiner warper. Adapters for Sipp-Eastwood and Cocker Warpers illustrated.

...holds 50% more yarn than 30" beam

PROVEN IN USE

Proof of the cost-cutting job Hayes beams will do is their record of acceptance in little over four years. Today over 40,000 Hayes light metal beams are in the textile industry.

A SIZE TO FIT YOUR NEEDS

You can obtain Hayes aluminum and magnesium section beams in 26", 28", 30", 32" and the new 36" head diameters. The new giant beam carries a huge yarn load — 50% more than 30" beam — for longer uninterrupted runs.

TRICOT AND LOOM BEAMS, TOO

You can also have the profitable advantage of light metal in tricot beams, regular or adjustable loom beams, and in loom beam replacement barrels for use with cast iron heads. All are engineered for *cost-saving production*, by Hayes.

BRING YOUR BEAMING PROBLEMS TO HAYES

Let the advantages of Hayes beams work for you. Plan now to convert, through normal replacement, to Hayes light metal beams. Hayes field engineers will be pleased to work with you in planning an economical change-over.

NOW FIVE SIZES . . . choose to fit your production needs
ALWAYS LIGHT METAL . . . cut costs with Hayes design

Mills equipped with Hayes light metal beams have a cost advantage. For light metal beams cut costs.

They cut shipping and handling costs . . . because they weigh one-half or less than conventional beams.

They cut production costs . . . because their balanced true running rigid heads and barrels give uniform selvages and permit faster speeds.

They cut reject costs . . . because of their rust-free, snag-free polished heads and barrels.

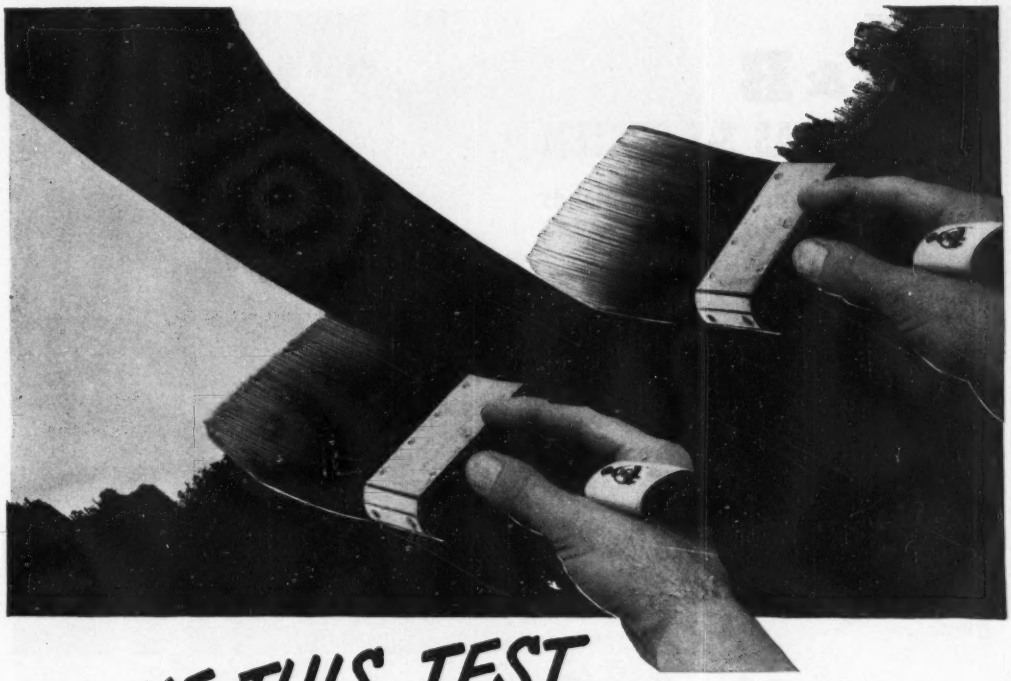
Write for information and the Hayes Catalog No. 100

HAYES
INDUSTRIES, INC.

HOME OFFICE: Jackson, Michigan

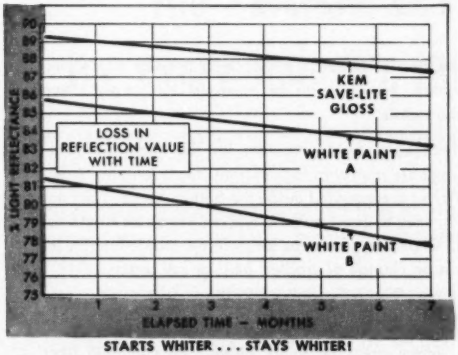
EASTERN REPRESENTATIVE
J. Paul Laird
Philadelphia, Penn.

SOUTHERN REPRESENTATIVE
R. E. L. Holt Jr. & Assoc.
Greensboro, N. C.



MAKE THIS TEST

before you paint your plant!



STARTS WHITER . . . STAYS WHITER!

Note how the whiteness, or reflective value, of Save-Lite *starts* higher than conventional finishes when first applied, and *continues* higher, as time goes on. This means *longer* intervals before repainting is required.

Compare KEM SAVE-LITE with ordinary whites

SEE why it stays cleaner—longer!

See for yourself the difference there can be in the whiteness of "white" finishes . . . even when they are first applied! Make a side-by-side comparison of KEM SAVE-LITE Mill White against conventional white finishes on any wall surface in your plant.

You can see the difference, from the start, in gleaming, brilliant whiteness...a difference because of the *controlled,* light-reflective properties that are designed into SAVE-LITE Mill White Finishes.

KEM SAVE-LITE *starts* whiter . . . KEM SAVE-LITE *stays* whiter, as the actual light reflectometer measurements in the comparative chart show. You'll find these same properties, too, enable it to hide better and cover farther! Call your Sherwin-Williams representative today for a demonstration, or write The Sherwin-Williams Co., Cleveland 1, O. (Division Offices, Charlotte, N. C. and Boston, Mass.)

SHERWIN-WILLIAMS

INDUSTRIAL MAINTENANCE FINISHES

SAVE-LITE MILL WHITE • COLOR HARMONY FINISHES

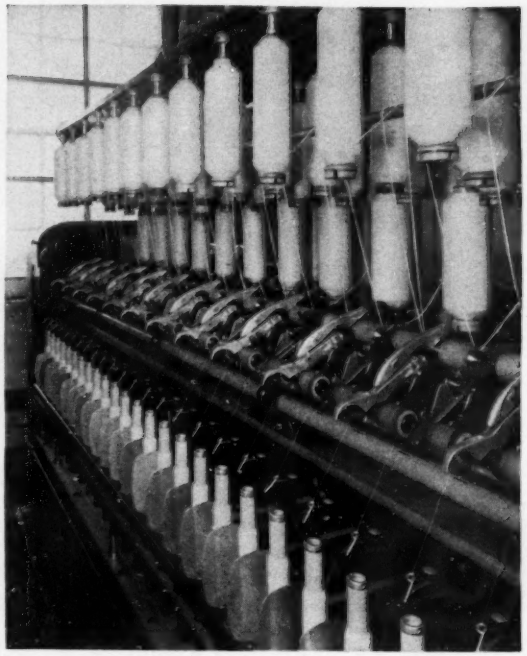
MILL VILLAGE PAINTS

THE

H & B

CASABLANCAS S-3 SYSTEM

for Spinning Synthetics and Blends



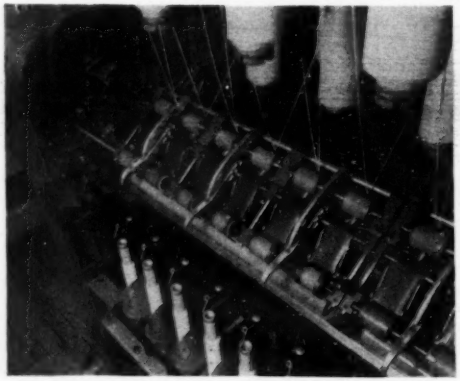
First introduced at the American Textile Machinery Exhibition last May, the H & B Casablancas S-3 System for synthetic fibers is now developed to a high degree of operating efficiency. The system features:

- *an extra, wide roll stand*
- *new interlocking saddle*
- *independent traverse motion*
- *new cap bars*
- *large cradle assembly*

The most important new S-3 feature is the wide roll stand which allows roller settings to accommodate fibers up to 3" in length. Changing the roll stand involved a new design of draft gearing, gear box and cover. The entire drafting element is mounted in a cross girt, which with the new gearing gives greater strength to the entire system.

Offers Flexibility

AND COMPLETE FIBER CONTROL



The newly designed interlocking saddles are spring weighted. Pressure can be released by merely lifting up the saddle.

The cradle design provides for the important interchangeable platforms for different staple lengths. These platforms are mounted inside the bottom apron. They are clean, easy to insert and are marked for quick identification. Changing platforms for different staple lengths involves no change of cradles, belts or roll settings.

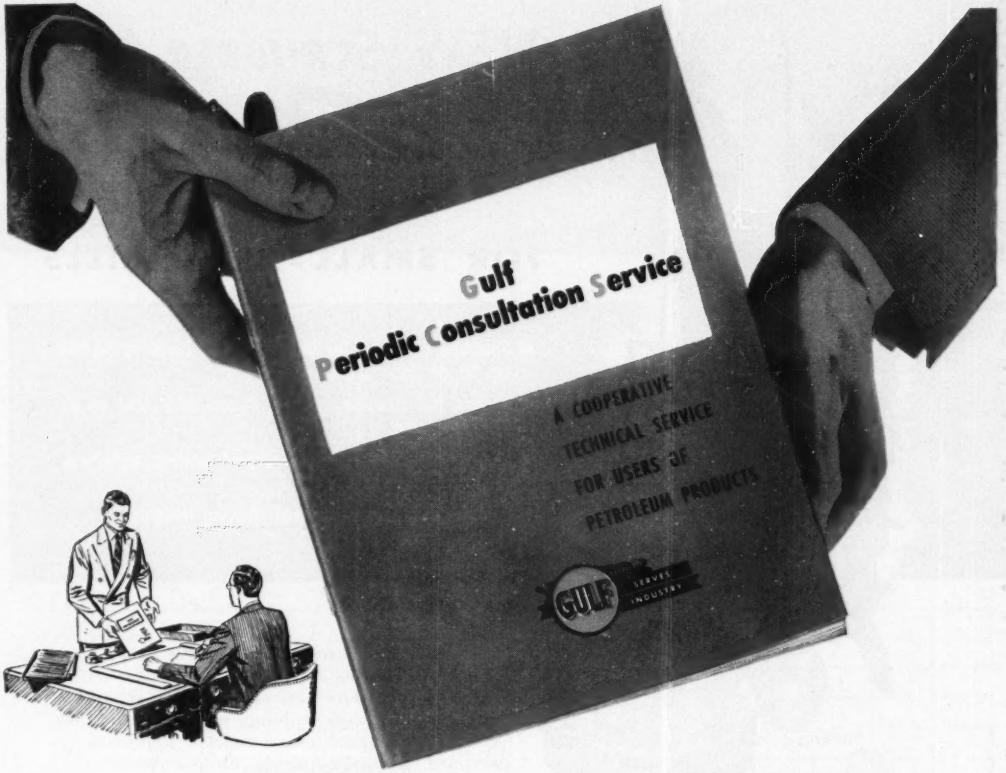
The H & B Casablancas S-3 System utilizing a combination of apron length, tensor opening and platform position, offers great flexibility along with complete fiber control regardless of staple length.

Contact an H & B Sales Engineer for complete details on this new spinning system for synthetic fibers.

H&B AMERICAN MACHINE CO.

FACTORY, EXECUTIVE OFFICES AND EXPORT DIVISION • PAWTUCKET, R. I., U. S. A.
Branch Offices: Atlanta, Ga. — 815 Citizens and Southern National Bank Bldg.
Charlotte, N. C. — 522 West 4th Street
Greenville, S. C. — 1510-11 Woodside Bldg.

Builders of MODERN TEXTILE MACHINERY



The "BOOKLET-OF-THE-MONTH" for every industry that uses petroleum products

Here is a practical cooperative plan that can help you cut controllable costs and offset higher non-controllables. From this single source you can get effective assistance on any problem that involves a petroleum product—any type of petroleum product.

Gulf Periodic Consultation Service makes available to you the regular counsel of one or more trained engineers, backed up by technologists who are skilled in every phase of petroleum science and who have years of experience with practically every type of industrial process and equipment.

This knowledge and experience can be applied profitably to your operating and maintenance problems. In your continuing efforts to increase manufacturing efficiency and profits, here is an important and definite step you can take—at once. Send for your free copy of the booklet which explains this cost-cutting service.

FIFTY YEARS OF SERVICE
1901 GULF 1951
PETROLEUM AND ITS PRODUCTS

Gulf Oil Corporation · Gulf Refining Company TI
Room 722, Gulf Building, Pittsburgh, Pa.

Please send me, without obligation, a copy of the booklet "Gulf Periodic Consultation Service."

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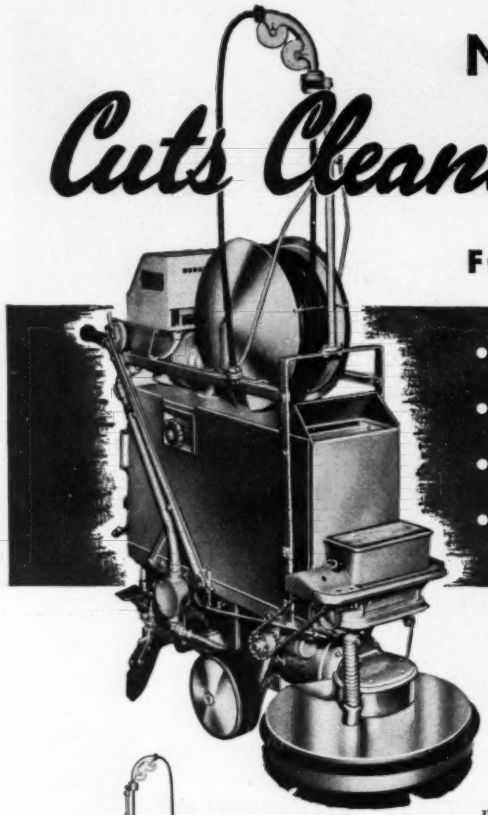
NEW SCRUBBER-VAC

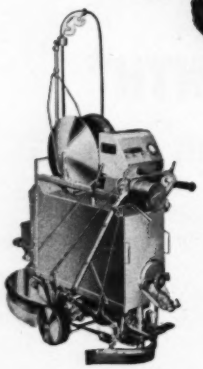
Cuts Cleaning Time 2/3

FOR SMALL-AREA MILLS



- Specially designed for buildings with 2,000 to 15,000 sq. ft. of floor space
- Applies the cleanser, scrubs, rinses, and picks up in ONE operation
- Also handles the dry work — steel-wooling, polishing, et cetera
- Can be leased or purchased (leasing budgets cleaning expense)

Now the labor-saving advantages of *combination-machine-scrubbing* are available to small as well as larger mills. The *new 418P Finnell Scrubber-Vac*, for small-area buildings with 2,000 to 15,000 sq. ft. of floor space, cleans floors in *approximately one-third the time* required with a conventional 15 or 18-inch scrubber-polisher using separate equipment for picking up. A *Finnell Scrubber-Vac* speeds cleaning by handling four operations in one! It applies the cleanser, scrubs, rinses if required, and picks up (damp-dries the floor) — all in a single operation.



Of narrow design, the *new 418P Scrubber-Vac* also meets the need in larger mills for a combination machine that can be used in congested areas, narrow aisles, and weave room alleys. All the refinements of *Finnell's* larger combination machines are embodied in this smaller unit (18-inch brush ring). Has new type of water valve that *assures* uniform flow of water . . . powerful vacuum for efficient pickup (performs *quietly*) . . . a *Finnell-developed* trouble-free clutch . . . self-winding cable reel . . . improved waterproof wiring and minimum electrical connections, simplifying the cleaning of the machine . . . G. E. Motors and Timken Bearings. The machine is self-propelled — operator merely *guides* it. Supplied with or without powder dispenser. Incidentally, it's good to know that when you choose *Finnell Equipment*, a *Finnell* man is readily available to help train your maintenance operators in its proper use.

SEE IT IN ACTION ON YOUR OWN FLOORS!

Find out what *you* would save with a *Finnell Scrubber-Vac*. *Finnell* makes several models and sizes. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 1306 East Street, Elkhart, Indiana. Branch Offices in all principal cities of the United States and Canada.

FINNELL SYSTEM, INC.

Pioneers and Specialists in

FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

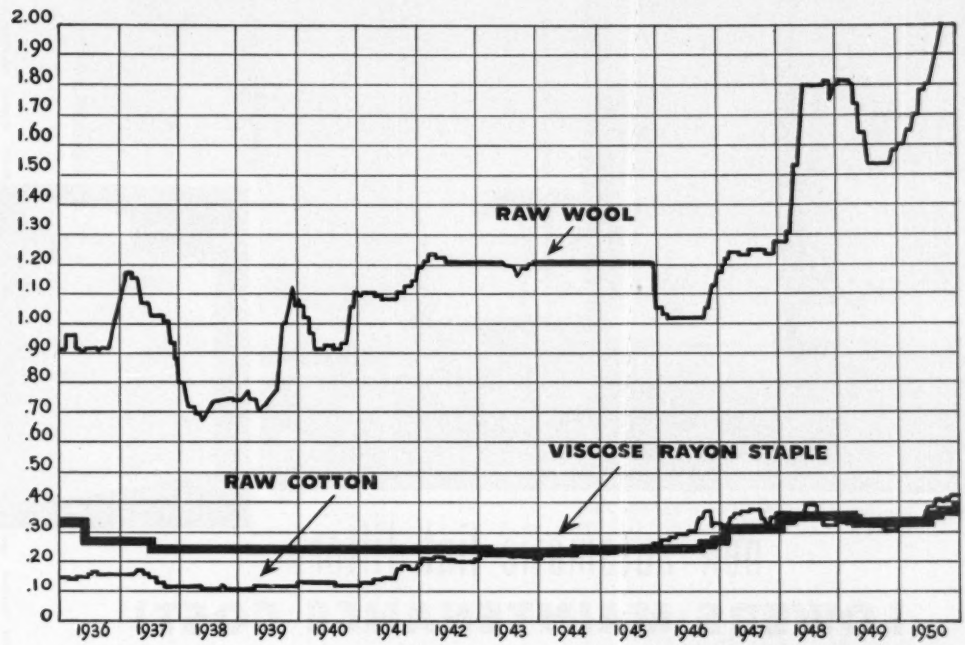


Chart Demonstrates Price Stability of Rayon Staple

Rayon's history of consistent price stability is graphically presented on the above chart. It shows that through depression, recession, war and peace man-made rayon's prices have been relatively proof from fluctuations caused by nature or man. This stability has played a part in the growing importance of rayon and its successful entry into so many divergent fields. It is believed that few products can show as stable prices over a similar period of years.

This chart, based on data in "Rayon Organon", is reproduced for wider circulation to those interested in modern textiles.

RAYON 20 YEARS AGO

NEW YORK, June 1931—The Viscose Company enters the acetate field with a new yarn called "Seraceta."

CHICAGO, June 1931 — Plans are being made to feature rayon fashions at the forthcoming Chicago World's Fair.

ROANOKE, VA., June 1931—The textile market is picking up. The Viscose Company plant here has added five more hours to its work week.

MAKE USE OF Avisco® 4-PLY SERVICE

To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

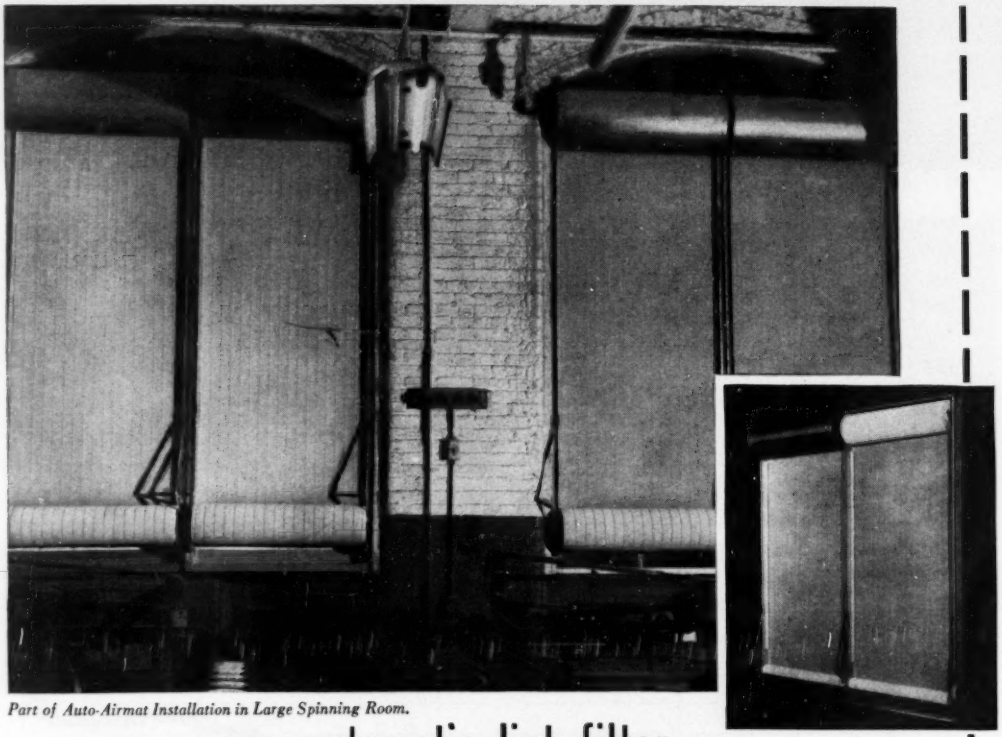
1 FIBER RESEARCH
2 FABRIC DESIGN
3 FABRIC PRODUCTION
4 FABRIC FINISHING

AMERICAN VISCOSE CORPORATION

America's largest producer of rayon

Sales Offices: 350 Fifth Avenue, New York 1, N. Y.; Charlotte, N. C.; Cleveland, Ohio; Philadelphia, Pa.; Providence, R. I.

today's best buy is better air!



Part of Auto-Airmat Installation in Large Spinning Room.

new automatic lint filter
LOWERS MAINTENANCE COST!

Auto-Airmat . . . the only practical automatic, self-cleaning lint filter . . . developed especially for textile mill service.

Excessive lint concentrations in weaving and spinning rooms create an expensive maintenance problem for necessary humidifying systems. Auto-Airmat . . . automatic, dry-type filter . . . was developed by AAF engineers to maintain high efficiency lint collection and reduce this costly maintenance factor to a minimum.

In the Auto-Airmat a sheet of Airmat* media from a roll at the top of the filter moves downward on an endless screen and is rerolled at the base of the filter . . . with its lint load.

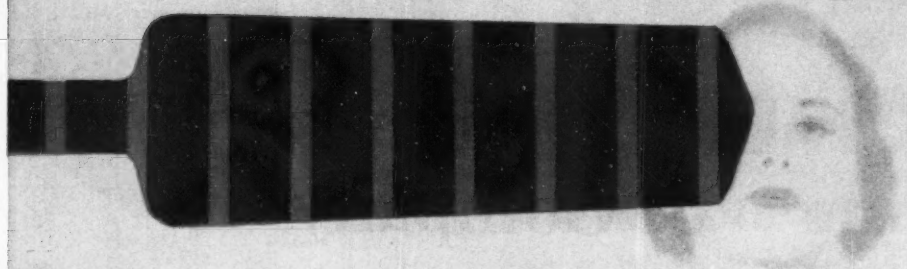
The rate and frequency of screen travel is automatically controlled by a pressure switch which starts the drive mechanism, when resistance builds up to a pre-determined maximum. The screen stops when sufficient clean Airmat has been introduced to reduce resistance by ¼", thus media usage is economical and directly proportionate to the lint concentration in the air. Auto-Airmat also licks the disposal problem since the lint load is contained within the rerolled Airmat, which eliminates costly maintenance.

If lint from your weaving or spinning rooms is a problem, call your AAF representative for full information on Auto-Airmat . . . or write us for Engineering Bulletin No. 234.

**AIRMAT is the trade-mark (Reg. U. S. Pat. Off.) of the American Air Filter Company, Inc., for various air filters, dust collectors, and filtering media.*

AAF American Air Filter
COMPANY, INC.
275 Central Ave., Louisville 8, Kentucky • In Canada: Darling Brothers, Ltd., Montreal, P. Q.

*ARIPERM pm®



Your reputation won't fade... if your acetate fabrics don't!

***ARIPERM PM® Prevents Gas Fading**

When colors fade, so does consumer confidence in the manufacturer's label; this "backs up", eventually, to the dyehouse. There's no need for this with fabrics (partially or wholly) of ACETATE RAYON, for *they can be given protection against fading from atmospheric gases. ARIPERM P M does the job.* Its durability means exceptional protection through washing and dry cleaning.

ARIPERM P M is especially valuable for dyeing Light Shades, Pastels and Tints, since it does not throw the shade over to the yellow. Application is simple, in scouring or directly in the dyebath. Write for details, sample, demonstration.

Arkansas Co. INC.

MANUFACTURERS OF INDUSTRIAL CHEMICALS FOR OVER 45 YEARS
NEWARK, NEW JERSEY

Arkansas Co., Inc.
184 Foundry St.
Newark, N. J.

Gentlemen:
I would like to have, without obligation:

- ☐ full details of ARIPERM P M benefits
- ☐ sample and application procedure
- ☐ demonstration in plant

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ESTABLISHED 1840

Custom-Made Protection

DILEINE AND MELEINE

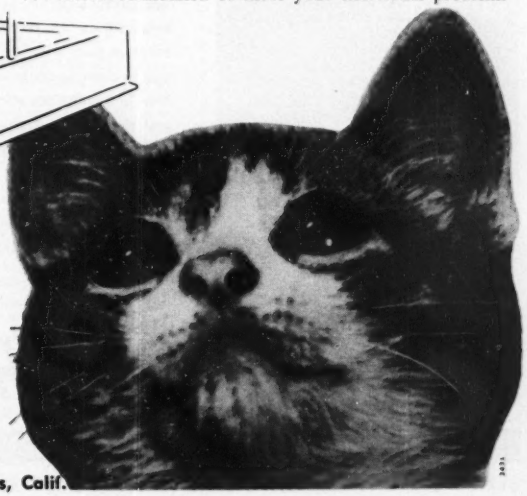
For a Wide Range of Gas Fading Protection Formulated to Meet Your Specific Needs

The Dileine and Meleine series of inhibitors offer you a complete range of gas fading protection when used in the dyeing or finishing process. They can be custom-formulated to meet *your* specific problems and plant conditions.

The application of Dileine in the dyebath does not require a predyeing operation. Dyeing may be carried out at high temperatures when Dileine and dyestuff are used simultaneously in the dyebath.

In the finishing process, Meleine is particularly recommended for fabrics that have been treated with resin finishes. It assures you of a smooth, mellow hand to the fabric finish.

If you have a specific problem our technical service department would welcome the opportunity of submitting samples . . . custom-formulated to meet your individual problem.



50th ANNIVERSARY 1901-1951

JACQUES WOLF & CO.
Chemicals PASSAIC, N. J.

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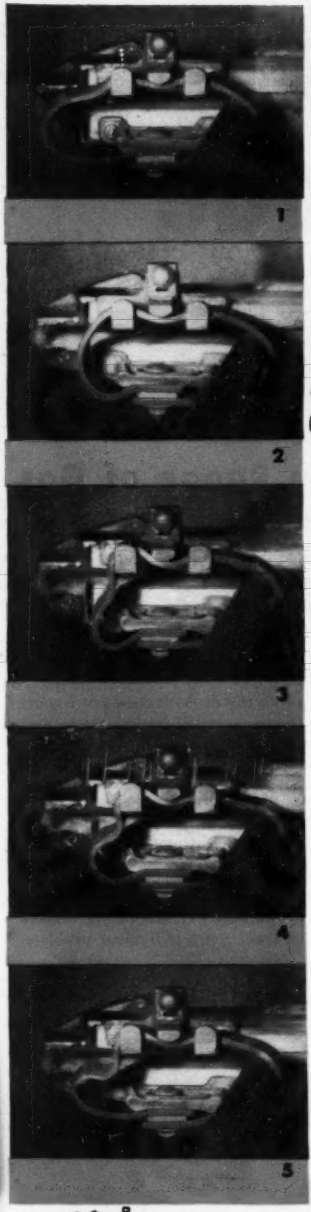


Follow-thru with Leather

See how the Hairitan® Leather

STRAIGHT CHECK STRAPS

assure smooth, positive shuttle throw

Look! See what happens to a straight check strap in less than a second! . . . as shown in this series of "frozen-action" photographs. In photo No. 1, the stick is approaching the bumper. It has already made contact with the loop of the strap and is drawing it through the fingers. In Nos. 2, 3 and 4 the stick is at the bumper and the strap is flexing back upon itself. In No. 5 the stick is starting to return and the strap soon will be completely flexed, ready to receive the stick and gently cushion its travel to the end of the lay.

Better than any other material, *leather* stands up under this continuous flexing. And better than any other leather, Hairitan Orange Line Straight Check Straps help produce that "live stick" action which prevents shuttle bounce, assures proper boxing and uniform shuttle flight on each pick.

G&K-DIXIE Hairitan Orange Line Straight Check Straps are engineered from green hide to finished product. This *follow-thru* in manufacture gives you elasticity and resilience with minimum permanent stretch — assures *follow-thru action* which means more hours of loom service — lower cost per loom hour.

New catalog of G&K-DIXIE Textile Leathers proves the balanced follow-thru team performance of Orange Line Loom Leathers. Send for your copy—you'll be glad you did so.

100 YEARS OF SERVICE TO INDUSTRY

GRATON AND KNIGHT®

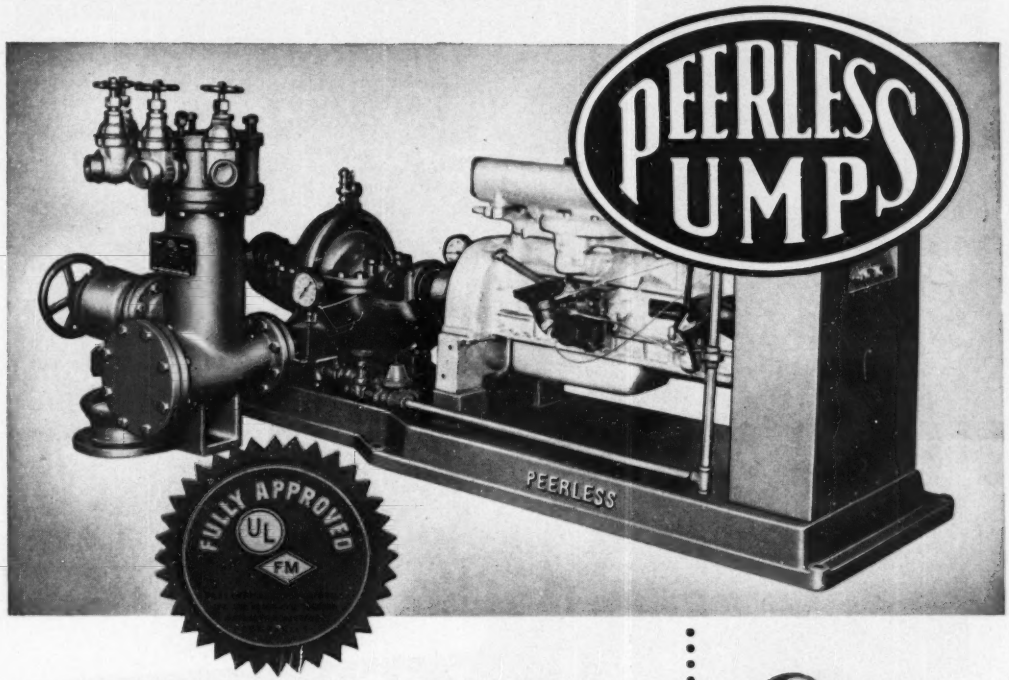
DIXIE LEATHER CORPORATION

Straight Check Straps

FAMOUS ORANGE® LINE TEXTILE LEATHERS

GRATON & KNIGHT COMPANY, WORCESTER, MASS. • DIXIE LEATHER CORPORATION, ALBANY, GEORGIA *Affiliate*

FOR UNSURPASSED FIRE PROTECTION PUMPS LOOK TO THE LEADER—LOOK TO PEERLESS



PEERLESS UNDERWRITERS' APPROVED FIRE PUMPS (DAYTON-DOWD DESIGN)

HORIZONTAL CENTRIFUGAL AND VERTICAL TURBINE TYPES—Peerless Underwriters' Approved Fire Pumps can be applied to practically every commercial and industrial risk requiring fire protection. They afford dependable, low cost protection, peak quality performance and unquestioned reliability that often will result in measurable savings in insurance cost.

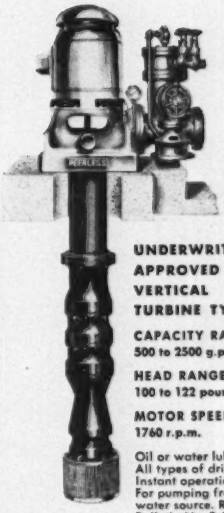
SINGLE AND MULTI-STAGE—Peerless Underwriters' Approved Fire Pumps are available in two types. The Type AF, shown above, is a single stage, double suction, horizontal centrifugal design, with a capacity range of from 500 to 2000 g.p.m., affording pressures, at rated capacities, from 40 to 150 lbs. and is available in 4", 5", 6" and 8" discharge sizes.

The Type TUF is a 2-stage pump available in 4", 5", 6" or 8" discharge sizes and furnishes from 500 to 1500 g.p.m., with a pressure range, at rated capacities, from 100 to 200 lbs.

ALL TYPES OF APPROVED DRIVES—Peerless approved fire pumps may be equipped with any type of drive: electric, steam turbine, gasoline or diesel engine. Auxiliary stand-by engine drives may be used in conjunction with turbine or motor drive to assure instant service even in the event of power failure.

SPRINKLER AND FOAM SYSTEMS—Peerless Underwriters' Approved Fire Pumps are ideal for application to liquid-foam type fire protection systems as well as to conventional sprinkler application; the former is especially desirable for solvent processing plant protection where the split-second control of fire hazards is a must.

NEW 24-PAGE BULLETIN ANSWERS ALL QUESTIONS ON UNDERWRITERS' FIRE PUMPS—Peerless Bulletin No. B-1500 completely describes and illustrates these unsurpassed and approved fire protection pumps. Write for your free copy today.



UNDERWRITERS' APPROVED VERTICAL TURBINE TYPES

CAPACITY RANGE: 500 to 2500 g.p.m.

HEAD RANGE: 100 to 122 pounds.

MOTOR SPEEDS: 1760 r.p.m.

Oil or water lubricated. All types of drives. Instant operation. For pumping from any water source. Request Bulletin No. B-152-1.

PEERLESS PUMPS fmc

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION

Address Inquiries to Factories at: Los Angeles 31, Calif. or Indianapolis 8, Indiana
Offices: New York, Atlanta, Fresno, Los Angeles, Chicago, St. Louis, Phoenix; Dallas, Plainview and Lubbock, Texas; Albuquerque, New Mexico

Where quality is the first consideration in a fabric there is no substitute for

Celanese®

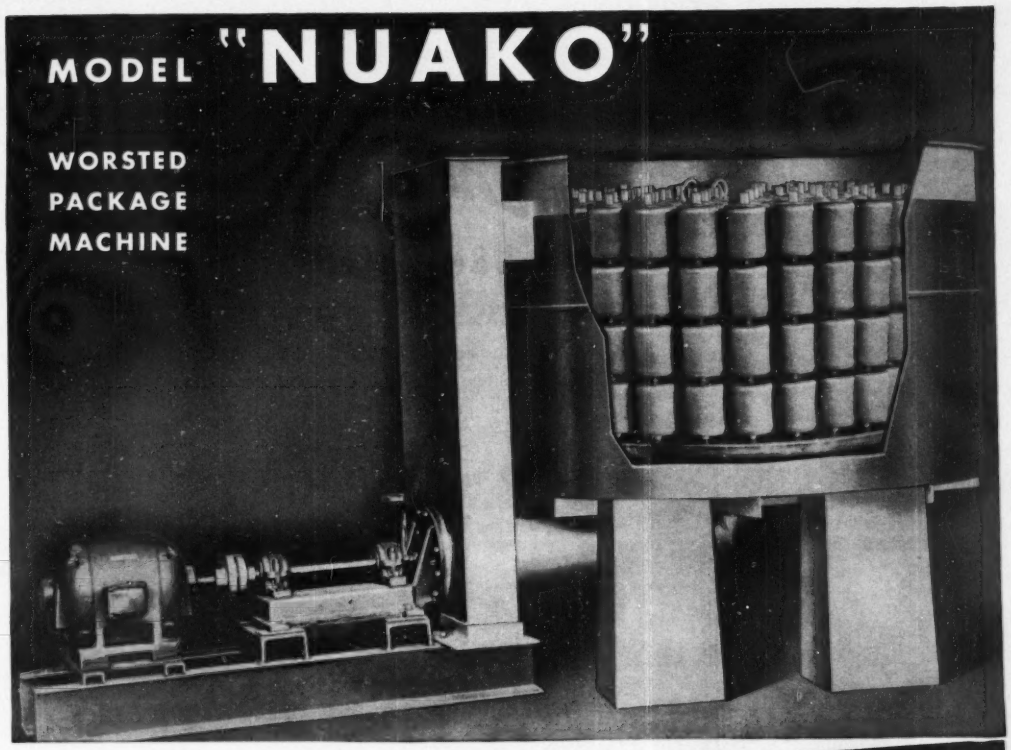
Acetate Rayon Yarn

*Reg. U.S. Pat. Off.

CELANESE CORPORATION OF AMERICA, 180 MADISON AVENUE, NEW YORK 16, N. Y.

MODEL "NUAKO"

WORSTED
PACKAGE
MACHINE



DEVELOPED FOR THE KNITTING TRADE

FOR DYED YARN "WITH THAT NATURAL FEEL"

NUAKO propeller system has full efficiency at boil. This assures positive level dyeing of yarn.

NUAKO fast circulation of liquor at low pressure prevents felting and channelling.

NUAKO has an exceedingly low liquor ratio for economical dyeing.

NUAKO removable material carrier permits maximum production at low labor cost.

NUAKO machines of 250-pound capacity may be coupled to one another to produce any desired poundage of a single shade in one batch.

NUAKO is of all-stainless-steel construction.

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INCORPORATED
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Obermaier
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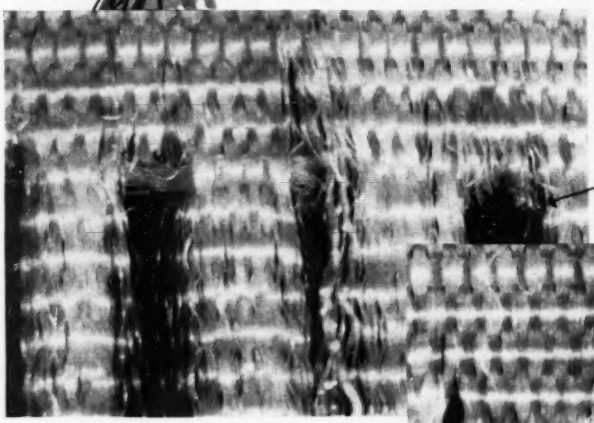
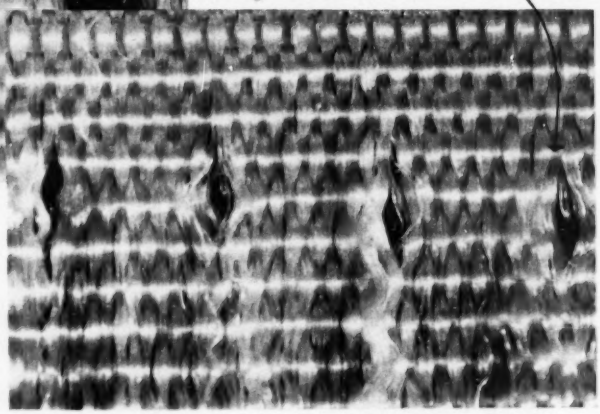
WEAK AT THE SEAMS... UNTIL FIBERS WERE LUBRICATED WITH PROFINE

What causes a well constructed fabric, sewed on modern machines, to exhibit excessive weakness at the seams? The pictures below tell the story.



Picture No. 1 shows the seam of a suiting fabric produced by a well known manufacturer. Needle damage . . . cut threads . . . can be observed where the fabric threads have been unraveled.

Seam threads pulled out here



Picture No. 2 shows a sample of the same suiting fabric . . . pre-treated *with Profine* and sewed under identical conditions. Needle damage is absent . . . no cut threads here!

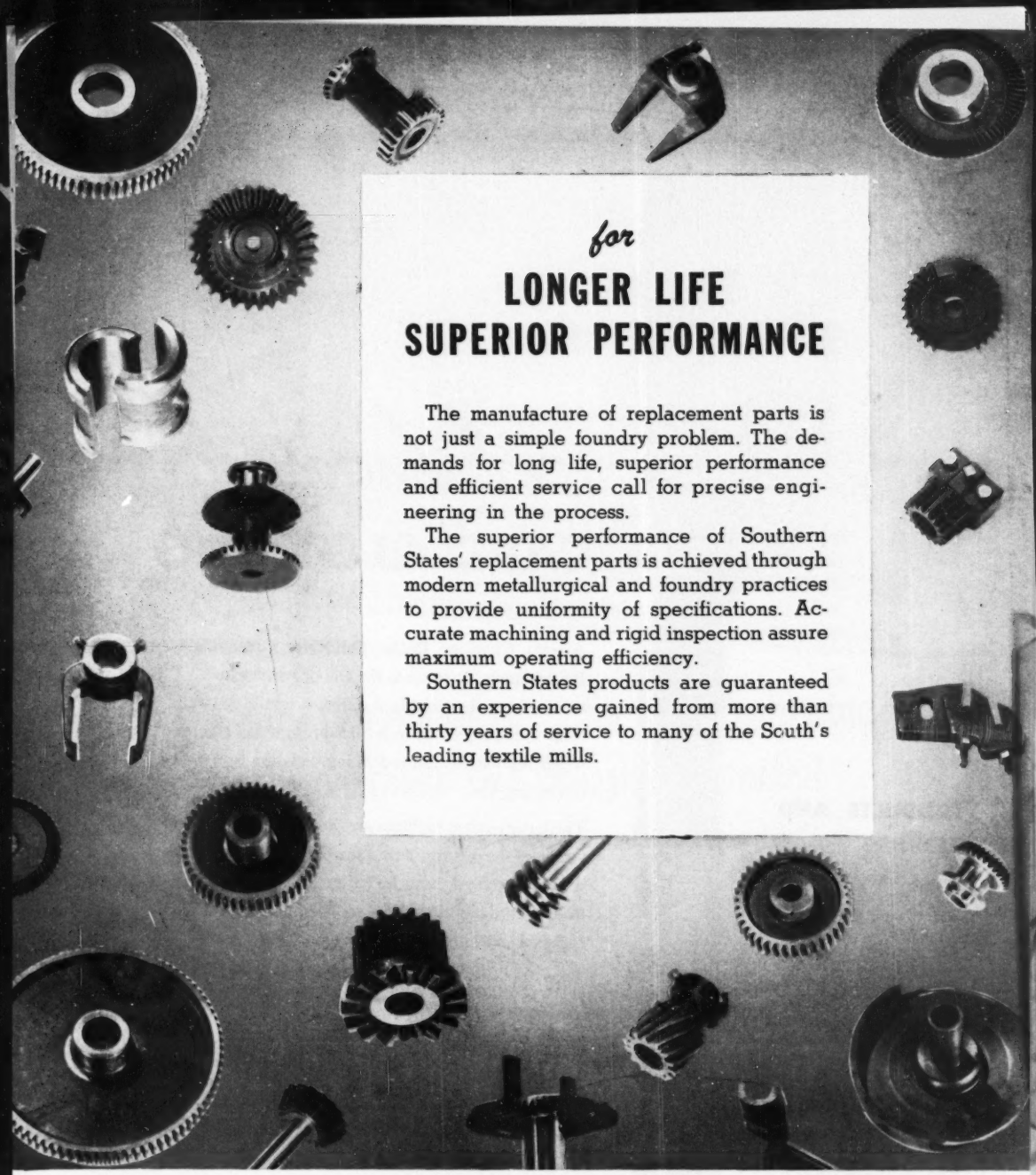
Profine controls softness, body and hand. If your knitted or woven fabrics require a full-bodied hand, you can get it with Profine. This efficient finishing agent gives you good whites that won't discolor . . . provides good anti-curl cutting . . . permits high speed sewing.

Profine is designed to up-grade fabrics . . . to increase their saleability. Try it.

Profine

Procter & Gamble
CINCINNATI, OHIO

MAKERS OF OLATE, PROXOL AND ORVUS PRODUCTS FOR BETTER TEXTILE PROCESSING



for

LONGER LIFE SUPERIOR PERFORMANCE

The manufacture of replacement parts is not just a simple foundry problem. The demands for long life, superior performance and efficient service call for precise engineering in the process.

The superior performance of Southern States' replacement parts is achieved through modern metallurgical and foundry practices to provide uniformity of specifications. Accurate machining and rigid inspection assure maximum operating efficiency.

Southern States products are guaranteed by an experience gained from more than thirty years of service to many of the South's leading textile mills.

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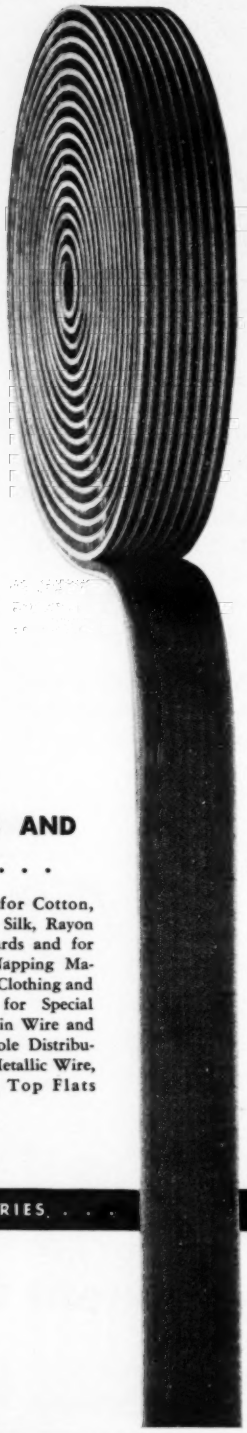
F. C. TODD, INC., Gastonia, N. C.

Largest Manufacturer of Cast-Tooth & Cut-Tooth Gears in the South



Ashworth

CARD CLOTHING

Atlanta, Charlotte, Dallas, Fall River, Greenville, Philadelphia . . . so reads the roll of Ashworth repair shops. Located in 6 different textile centers, these shops are set up to furnish prompt and efficient repair service, top flat reclothing, lickerin rewinding, etc.

These convenient facilities are, however, but one aspect of the picture. For Ashworth also has 4 widely separated factories for making high quality card clothing and associated products. This means a continuous source of supply at all times.

Then, too, there's the matter of Ashworth Free Surveys. To increase your card efficiency, they're worth asking us about — today.

PRODUCTS AND SERVICES . . .

Card Clothing for Cotton, Wool, Worsted, Silk, Rayon and Asbestos Cards and for All Types of Napping Machinery. Brusher Clothing and Card Clothing for Special Purposes. Lickerin Wire and Garnet Wire. Sole Distributors for Platt's Metallic Wire, Lickerins and Top Flats Reclothed.

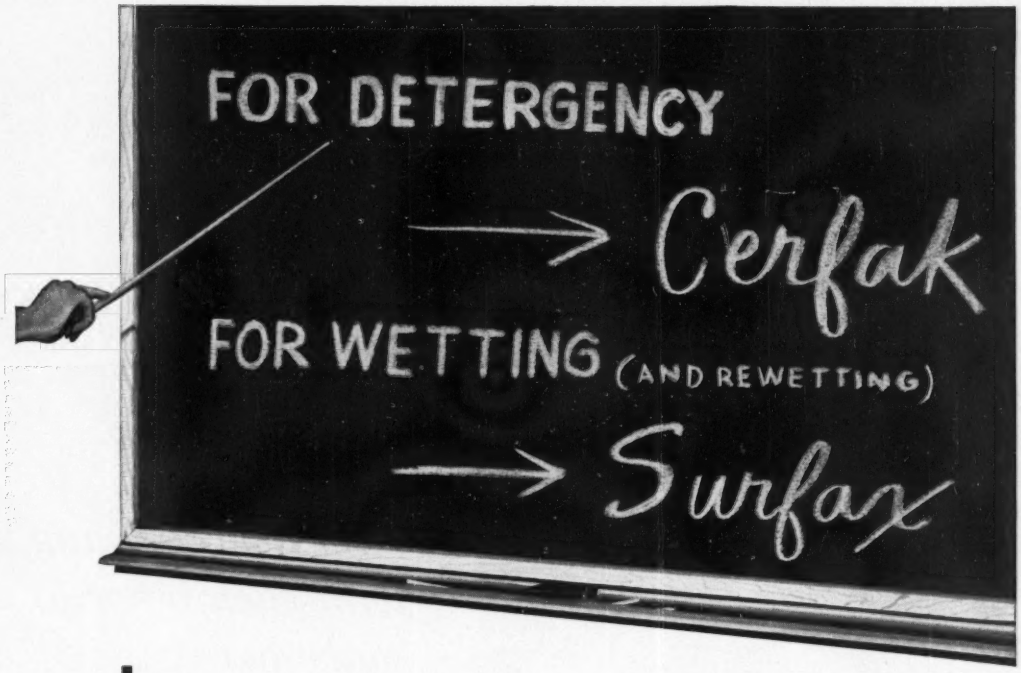
4 FACTORIES . . . **6** REPAIR SHOPS . . . **7** DISTRIBUTING POINTS

ASHWORTH BROS., INC.

American Card Clothing Co. (Woolen Division)

Fall River *†‡ Worcester *‡ Philadelphia*†‡ Atlanta†‡
Greenville*†‡ Charlotte†‡ Dallas†‡ (Textile Supply Co.)

Factory* Repair Shop† Distributing Point‡



It's easy to remember... for Wet Processing, rely on these two Houghton brands!

The entire Houghton line of surface active agents is identified by two trade names —"Cerfak" and "Surfax." When *detergency* is the chief factor in your processing, pick one of our seven "Cerfak" products and you'll be right every time. When you want exceptionally good wetting and rewetting power, a "Surfax" agent will solve your problem. In applications where *both* detergent and wetting action are needed, there's a "Cerfak" available for excellent results.

Many textile mill men are using the Houghton Chart in choosing surface active agents for specific processing jobs. It was developed after fifteen years of textile research by Houghton engineers. It will help you choose the agent with detergent and/or wetting properties for any mill application. We will gladly send you one of these charts. Write to E. F. Houghton & Co., Philadelphia 33, Pa.

CERFAK and SURFAX
. . . products of

E. F. HOUGHTON & CO.
PHILADELPHIA · CHICAGO · DETROIT · SAN FRANCISCO

Ready to give you on-the-job service . . .

ASK THE HOUGHTON MAN
to show you how "Cerfak" and "Surfax" concentrated products are improving quality at lower cost for many mills.

Everybody's vying with each other to make her CINDERELLA *every night!*

. . . AND THIS COMPETITION BEGINS IN THE WEAVEROOM

Listen to the music, Cinderella: "This soft cascade of sheerest moon-mist... this unspoken invitation to romance... this brilliant setting for your special loveliness!" Every day before her eyes passes an endless whirl of fine fabrics, distinctive designs, changing chords of color. Through each day she is many women, and now she can afford to interpret, in dress, the personality of each.

How can she buy so much for so little? Because there are so many mills with modern weaverooms that are *competitive in output and quality* . . . for the good reason that they're equipped with high-speed, convertible C&K Call Box Looms. And these mills will *remain* competitive through the most sudden and unexpected fashion-changes . . . because they have learned how to take full advantage of the matchless versatility of C&K Looms. Have *you?*

This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Woven Fabrics

Crompton & Knowles LOOM WORKS

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Philadelphia, Pa. • Charlotte, N. C. • Allentown, Pa. • Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.

Your Best Buy—NATIONAL ANILINE DYES

Growing integrated production makes National Aniline
the preferred source for both civilian and military dyestuffs.
For unusual color effects, ask National Technical Service
to provide exact matches and low-cost formulas based on available

National Aniline Dyes

For prompt service on the colors you need, write, wire or phone our nearest office.

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Why pay extra for refrigeration?

What's that? You've *got* air conditioning? Well, so you have. I recognize that air washer. One of ours.

Glad to hear it. When it comes to keeping your relative humidity right on the line . . . well, you can't beat a Carrier evap cooling system.

The mill seems hotter than it used to be? Well, maybe you're running some of these new synthetics. In which case you've had to reduce your relative humidity and naturally increased your temperature. Then, too, you've got more machines, running faster, and better lighting. The added heat load may be too much for your evap system. That would show up in reduced relative humidities. Or, maybe it's just hotter outside.

You know, up to now, we've been talking relative humidity, but your effective temperature is climbing, too. Effective temperature? Well, that's the temperature that you and I feel.

Reduce it and you've got more effective workmen. And more production per dollar of labor costs.

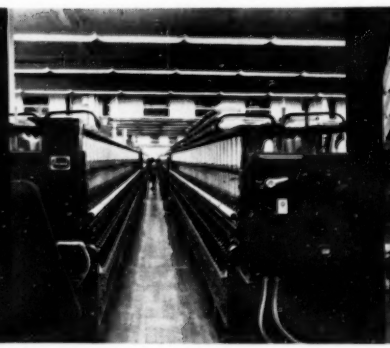
How do you reduce it? That's where refrigeration comes in. And it's easy. You just feed *chilled* water into that air washer. Do that and you control your air completely.

Should *you* add refrigeration? Well, that depends. But this much is sure. Every textile mill is riding a trend line that's going *up*. And sooner or later you'll add that refrigeration. The trick is to add it at exactly the right time. That's the way to make it pay off.

P. S. We think we can help you decide what is the right time for your mill. Carrier Corporation, Syracuse 1, N. Y.

Carrier

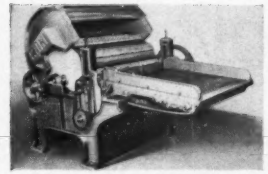
AIR CONDITIONING
REFRIGERATION
INDUSTRIAL HEATING



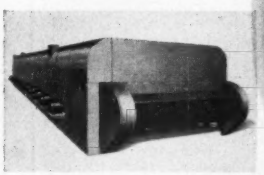
At Robbins Mills, Inc., North Carolina, chilled spray water holds the temperature at 80 degrees, permits changing relative humidities to suit the fiber being run. A 1200-ton Carrier Centrifugal chills water for nine separate systems.

At Gerrish Milliken, South Carolina, Carrier Air Conditioning with refrigeration increases production, decreases faults. Individual chilled water controls allow relative humidity to be varied while holding the temperature constant.

PREPARATORY MACHINERY SARGENT'S FOR THE TEXTILE FIELD

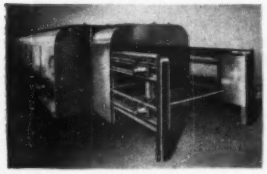


WET-and-DRY PICKER
All-job, cotton and all synthetic fibres . . . single process . . . opens and picks wet or dry stock thoroughly, economically.



RAW STOCK DRYER
Leader in its field . . . all fibres . . . conventional down-draft air circulation. Fast, trouble-free production.

AUTOMATIC FEEDER
Continuous, completely automatic operation. For scouring machines, openers, pickers, and all preparatory equipment.



SKEIN DRYER
Tensionless, uniform drying for all yarns. Each section individually controlled to attain peak efficiency in drying cycle for different fibres.

Known and Accepted *'Round the World...*

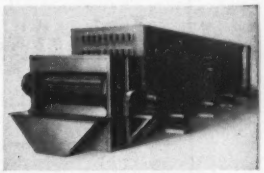
Wherever there are textile mills . . . from India to Indianapolis . . . from Chile to Chillicothe . . . from Singapore to Savannah . . . you'll find SARGENT Preparatory Equipment producing 'round the world, 'round the clock. Designed and built for the particular plant, process, production need. For trouble-free, speedy, top-quality production, in any country, any language, SARGENT Preparatory Equipment is tops!

Write us for your copy of the recent SARGENT Catalog #184.

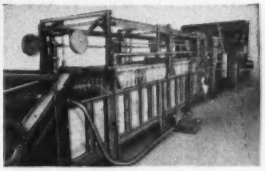
★ ★ SINCE 1832 ★ ★

SARGENT'S LABORATORY
for Solving Your Drying Problems

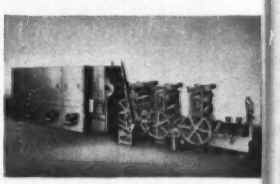
C. G. SARGENT'S SONS CORPORATION maintains a complete, modern-as-tomorrow laboratory to aid customers and non-customers alike in solving drying problems. Not only for textiles, but leather, rubber, paper, synthetics, plastics, etc. Our experienced engineers are happy to test difficult-to-handle materials for you and to recommend procedures for you to gain your objective — efficient drying at economical cost. Call on SARGENT'S Laboratory when you have a drying problem. Maybe we can help.



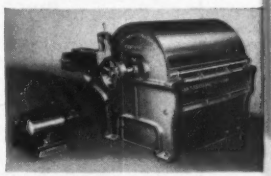
CONTRA-FLOW DRYER
For all fibres . . . employs revolutionary counter-air-flow heating principle to provide rapid, economical drying . . . completely automatic.



STAINLESS STEEL WASHING MACHINE
Multi-purpose . . . continuous process scouring, bleaching, acidifying . . . stainless steel throughout . . . SARGENT-designed for high production, economy, efficiency.



BACKWASHER and DRYER
Continuous process . . . versatile . . . particularly useful to worsted spinners, custom combers and job dyers. Dryer has perforated plate or wire cloth aprons, individually motor-driven fans.



MIXING PICKER (heavy duty)
Versatile, adaptable . . . extremely rugged, high-production unit for continuous blending systems.

C. G. SARGENT'S SONS CORPORATION

Graniteville, Massachusetts, U. S. A.

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Picker Repair Parts--*Quickly*

We keep in stock for prompt shipment all parts for Kitson pickers as well as those of our own manufacture. For years we have shipped practically all repair part orders within 24 hours from the receipt of the order.

Most of our customers keep few, if any, picker repair parts in their stock rooms, but depend on our stock for service. This will be particularly desirable during the war emergency, when one large, available stock of parts can take the place of hundreds of incomplete stocks which would tie up a great deal more critical materials than the one large stock.

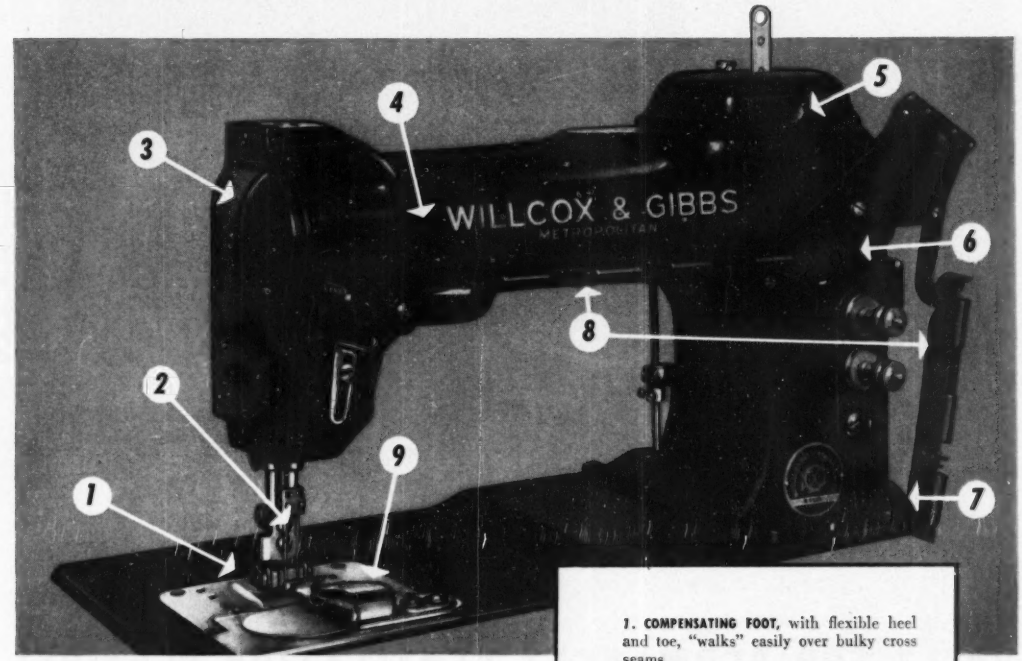
Our hundreds of regular customers are familiar with our service and depend on it. To those who are not our customers, we extend a cordial invitation to come to us in any emergency in the picker room.

We manufacture a complete line of picking, opening and blending machinery, and also rebuild like new old machines which are in need of replacement.

AldricH MachinE

Greenwood WorkS South Carolina

Here's why the "W&G" Type 1101 has no equal for
SUSTAINED HIGH-SPEED PRODUCTION



The Improved Design Features of this New Machine Assure Faster, Easier and Better Production — at Lower Over-all Cost

If you're looking for a two-needle, lap-seam felling machine that will give you higher speeds, greater precision, easier operation and longer, trouble-free service, *this is it.* Actual on-the-job performance has proved its superiority again and again — for sleeve setting operations on shirts, dresses, pajamas and lap-seam felling on any type of garment made of light or medium weight material. It is also widely used for side and rod hemming on curtains and drapes, as well as barrel hemming on curtain ruffle.

For complete information, ask for your free copy of Bulletin No. 936.

WILLCOX & GIBBS
Sewing Machine Co.

214 West 39th St., New York 18, N.Y.

1. **COMPENSATING FOOT,** with flexible heel and toe, "walks" easily over bulky cross seams.

2. **IN-LINE NEEDLES** permit even starting and finishing of seams — accurate margin control.

3. **NEW FRAME** with large removable cover plates saves down time for inspection and servicing.

4. **ARM SHAFT,** in perfectly balanced eccentric sleeve bearing assembly, minimizes noise and vibration.

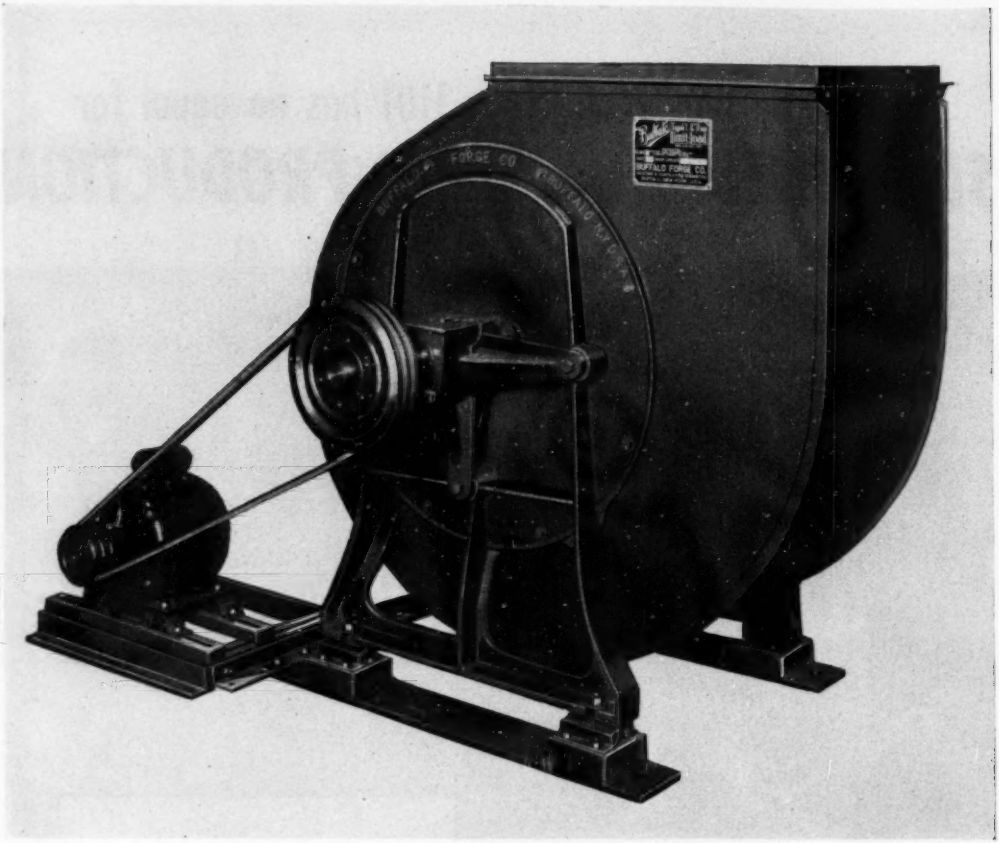
5. **POSITIVE LUBRICATION SYSTEM** eliminates hand oiling. Reservoir feeds filtered oil to each bearing by capillary action.

6. **INTERNAL BELT DRIVE** of wire-reinforced composition, has extra strength and durability for heavy-duty service.

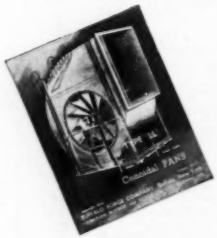
7. **SINGLE HAND WHEEL** with improved belt guard gives added safety — simplifies threading, starting and stopping.

8. **THREAD GUIDES** with built-in separators prevent whipping or snarling of threads.

9. **ADJUSTABLE FOLDER** permits accurate edge control for close stitching.



BUILT FOR PERMANENT VENTILATION SERVICE!



You can buy cheaper fans than "Buffalo" Limit-Load Fans, but none which give you such a high level of performance, year after year! "LL" Fans are a quiet, medium-speed, high-efficiency design. Their double curved blades and specially shaped inlet vanes . . . their ideally-formed housing scroll . . . their smooth running rotors, precision-balanced at the factory . . . mean the ultimate in air service. These are reasons why non-overloading "Buffalo" Limit-Load Fans are chosen for many of the country's largest ventilating and air conditioning systems. You can pick from a wide variety of arrangements and capacities from 600 to 500,000 cfm. If you plan a *permanent* system, put "Buffalo" Limit-Load Fans in it!

Write for Bulletin 3737

"Buffalo" FIRST FOR FANS

BUFFALO FORGE COMPANY

175 MORTIMER ST. BUFFALO, N. Y.

Canadian Blower & Forge Co., Ltd., Kitchener, Ont. Branch offices in all Principal Cities

VENTILATING FORCED DRAFT | AIR WASHING COOLING | AIR TEMPERING HEATING | INDUCED DRAFT EXHAUSTING PRESSURE BLOWING

"Whether there be Prophecies, They Shall Fail"

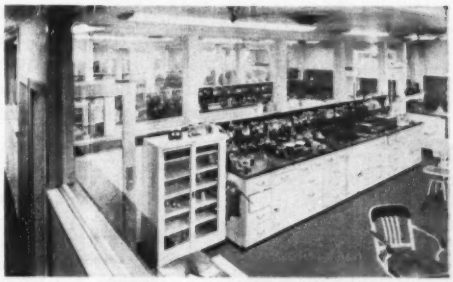
. . . those words, spoken by a redoubtable seer nearly 2000 years ago, have probably never been so pertinent as they are today. For today's most carefully computed prediction may prove completely false tomorrow. *We* certainly are not attempting to prophesy anything, but are simply keeping "our noses to the grindstone" doing all we can to provide the textile industry with top quality chemicals that assure better and more economical processing, and *superior products.*

The pictures shown here join with our headline to emphasize this message we would leave with you: *Whatever the uncertainties ahead, you can do no better than call upon the experience, skills and facilities accumulated by Nopco*.*

One of the oldest and most reputable suppliers of processing chemicals, we are prepared to supply you with outstanding Nopco FUA, an extremely versatile and efficient wool oil; Nopco 1656-R, the *one* worsted lubricant that eliminates static; nylon coning oils, dyeing penetrants; synthetic detergents and wetting agents; silk and rayon throwing oils; and the many other textile products for which we are famous.

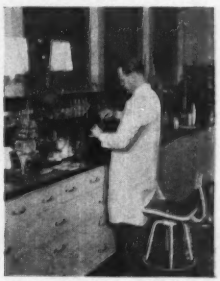
As you go to work today in the interests of national defense, remember, too, that we are ready to make recommendations and supplement laboratory data with technical aid right in your mill. It will remain our fixed policy to serve you to the best of our ability, *come what may.*

Nopco Headquarters — Harrison, New Jersey



New Nopco Research Laboratories

Evaluating the effectiveness of warp and filling size formulated to give specific weaving results.



Preparing a sample of processing oil preparatory to running exacting laboratory tests.

NOPCO
EVOLVED THRU RESEARCH

NOPCO CHEMICAL COMPANY
HARRISON, NEW JERSEY
Branches: Boston, Chicago, Cedartown, Ga., Richmond, Calif.

*REG. U. S. PAT. OFF

PRODUCTION PROBLEMS

got you up a tree?

● The function of our Technical Service Department is to help solve various production problems in the field. These men are constantly working with new products and techniques—perhaps this experience would be helpful in smoothing out production sore spots in your operation.

Our basic, continuing research in starch chemistry is unsurpassed . . . under the direction of the foremost research men in this field.

Make the most of these facilities . . . no obligation, of course.

For uniform quality products . . . for a reliable source of supply . . . depend on Corn Products Refining Company.

Globe and Eagle are registered trade-marks of Corn Products Refining Company, New York, N. Y.

write to

CORN PRODUCTS REFINING CO.

17 Battery Place, New York 4, N. Y.

Anywhere in Textile America . . .

this *specialist*
in Yarn Carrier
selection
and application
is located nearby

Wherever your mill is situated . . . North, South, Canada, California . . . it's not far from the headquarters of some sales representative of the U S Bobbin & Shuttle Co.

Each U S sales representative is a *specialist* in the selection and application of bobbins, shuttles and other U S products. Each devotes *full time* to helping millmen get top efficiency and economy with yarn carriers in every processing operation, from fiber to fabric.

And every U S representative is backed by a carefully integrated manufacturing and distribution system which is unmatched in the industry.

Every facility, from forest to frame — from logging to looms — is U S owned and controlled — the reason why the U S 93-year reputation for topmost quality can be steadily maintained.

U S is ready, now, to equip your mill with the cost-cutting new designs in yarn carriers you need to beat today's cost squeeze. The U S representative near you will call at your request to discuss your requirements. You'll find that most U S products can be delivered when you want them, without delay.

U S TIMBER PROPERTIES AND ROUGHING MILLS

Selected hardwoods from extensive U S owned timber lands are formed into blanks and conditioned in modern kilns at U S roughing mills.

U S MANUFACTURING PLANTS AND SALES OFFICES

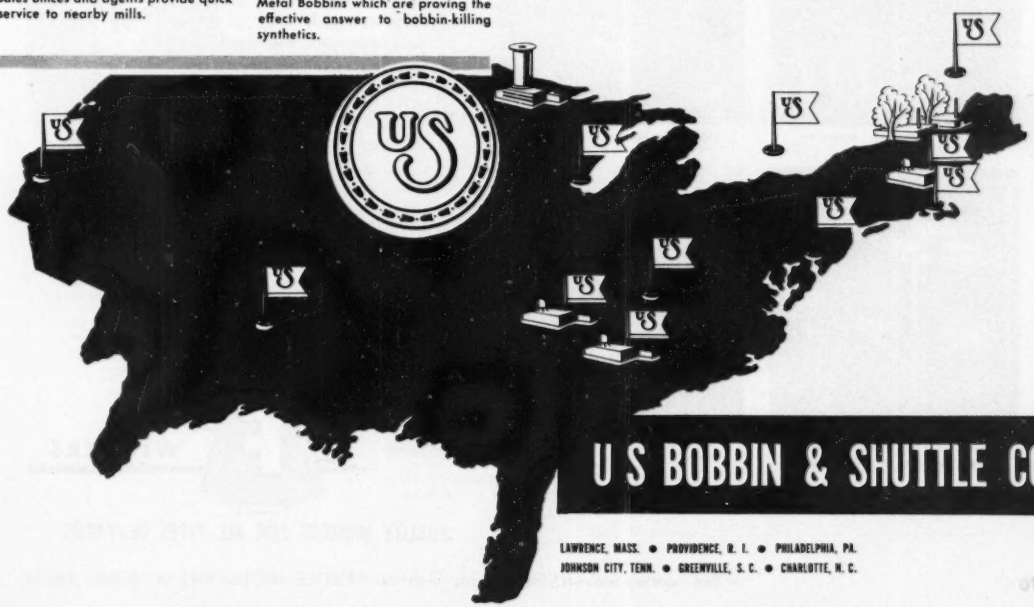
From the rough blanks, bobbins, shuttles and other wooden yarn carriers are manufactured in U S plants located near the centers of textile manufacture, North and South. A sales office operates in each of these plants.

OTHER U S SALES OFFICES AND AGENTS

Conveniently located in all other textile producing areas, U S separate sales offices and agents provide quick service to nearby mills.

PLANT FOR MANUFACTURE OF ACROPAK METAL BOBBINS

Acrometal Products, Inc., a U S subsidiary, produces the ACROPAK Metal Bobbins which are proving the effective answer to bobbin-killing synthetics.



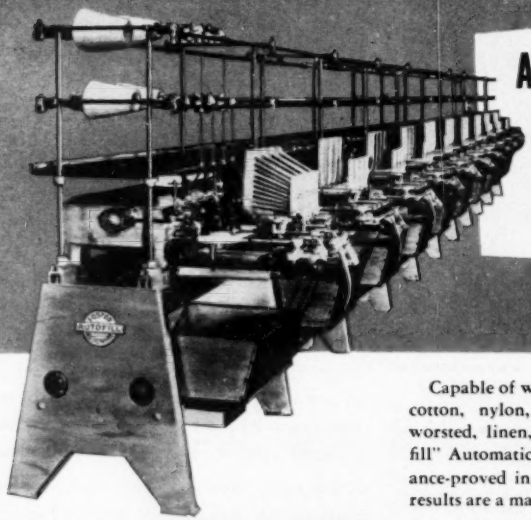
U S BOBBIN & SHUTTLE CO.

LAWRENCE, MASS. • PROVIDENCE, R. I. • PHILADELPHIA, PA.
JOHNSON CITY, TENN. • GREENVILLE, S. C. • CHARLOTTE, N. C.

CHICAGO: Albert R. Brown, 80 E. Jackson Blvd. • LOS ANGELES: E. G. Paules, 1762 W. Vernon Ave. • CANADA: W. J. Westaway, Montreal, Que., Hamilton, Ont.

FOR HIGH PRODUCTION AT LOW COST

THE FOSTER-MUSCHAMP "AUTOFILL"



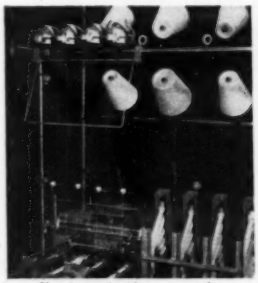
A Fully Automatic Filling Winder Built to Cut Costs

Capable of winding bobbins of all types of yarns, cotton, nylon, silk, rayon, rayon crepe, wool, worsted, linen, etc., the Foster-Muschamp "Autofill" Automatic Filling Winder has been performance-proved in all parts of the world. Production results are a matter or record.

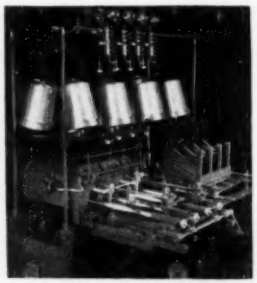
Strongly built units of four spindles each are compact, simple to maintain, with working parts and controls easily accessible. The "Autofill" is completely automatic; requires no skilled labor; and includes among many special features the following:

- Capable of speeds up to 6,000 r.p.m.
- Adjustable for bobbins from 2" to 14" in length.
- Yarn layer locking device prevents sloughing.
- Adjustable automatic bunch builder.
- Mechanical diameter control. No builder wheel in contact with the yarn to cause broken filaments or ridged bobbins.
- Constant spindle speed. Positive drive.
- Maximum production with minimum floor space.

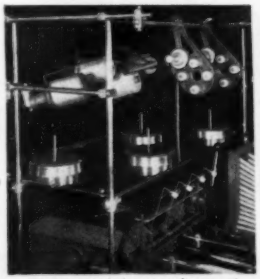
Send today for Bulletin M-1, which gives complete details.



Close-up showing magazine cone supply for cotton.



Magazine cone supply for filament rayon.



Rayon crepe being wound over end from packages at high speed.

Winding filament rayon from parallel packages.

FOSTER MACHINE COMPANY

Westfield, Mass., U.S.A.

Southern Office: Johnston Bldg., Charlotte, N. C. • Canadian Representative: Ross Whitehead & Company, Limited, 1475 Mountain St., Montreal, Canada • European Representative: Muschamp Taylor Limited, Manchester, England.

FOSTER F WINDERS

QUALITY WINDERS FOR ALL TYPES OF YARNS

Three new improvements for finishing synthetics

Now Monsanto's SYTON . . . a uniform, microscopic silica . . . is applied on the padder or jig for three major advantages:

1

Scroop: For the development of scroop on nylon marquisettes, rayon linings, satins, taffetas, ribbons. Also, *luster control* on sheers, linings, taffetas, lingerie fabrics, and elastic webbings.

2

Worsted-like hand takes the place of the regular synthetic's smooth, slippery finish. On viscose-acetate suitings and rayon-wool blends, for example, a fine dry hand is obtained by using Syton with urea or melamine formaldehyde resins.

3

Slippage-Control on filament-type fabrics including nylon, viscose and acetate. Syton puts a friction "tread" on slippery surfaces of synthetics, provides slippage control, prevents distortion and shifts in weave.

Syton is compatible with a wide variety of finishing agents. No curing or after-treatment is necessary.

Free Booklet — Take advantage *now* of the special finishing effects and the *job advantages* that Syton can give you. Write today for specific information, or for Monsanto's new booklet: "Syton In Textile Finishes." Syton: Reg. U. S. Pat. Off.

MONSANTO
CHEMICALS — PLASTICS

SERVING INDUSTRY . . .
WHICH SERVES MANKIND

MONSANTO CHEMICAL COMPANY, Textile Chemicals Dept.
Everett Station, Boston 49, Mass.

☐ Please send me information on Syton for
☐ Please send me the special booklet: "Syton In Textile Finishes."

Name & Title _____

Company _____

Address _____

City, Zone, State _____

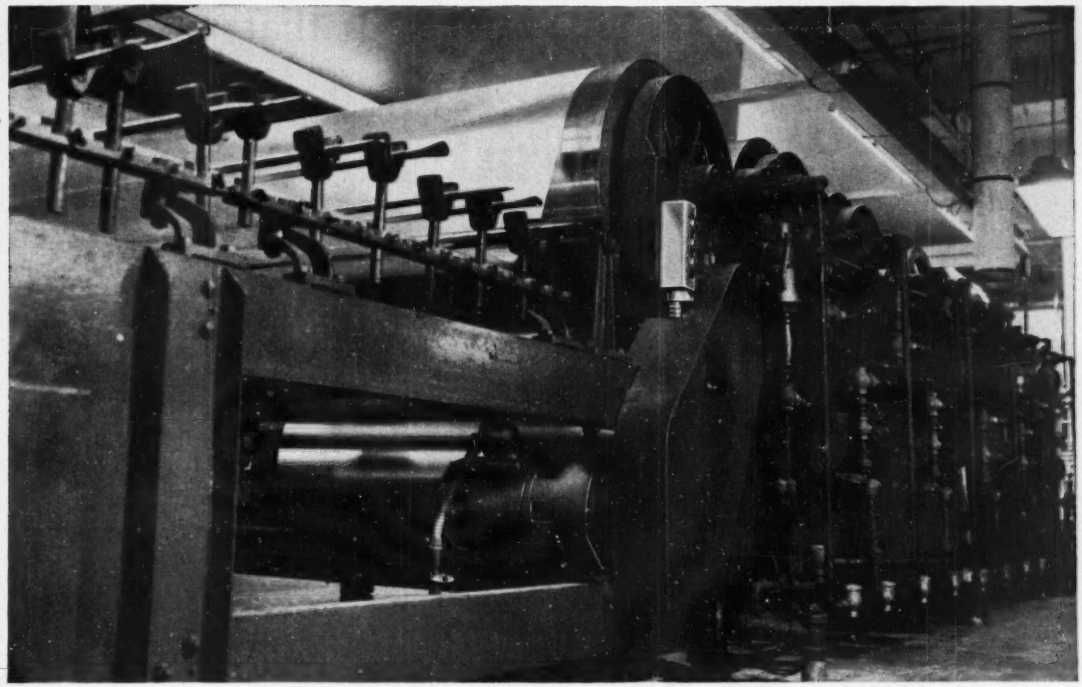
Now—save with a PACKAGED G-E Slasher Drive

Here's all you need!

A packaged G-E slasher drive consists of only (1) any required number of d-c driving motors with their associated rheostats, (2) operator's control stations which can be put wherever is most convenient, and (3) a "package" containing everything else—motor-generator set, exciter, and all control—which can be remotely located to save space around the slasher.

GENERAL ELECTRIC

654-17



G-E amplidyne-controlled 4-motor drive provides operating speed of 12 to 60 yards per minute for this synthetic yarn slasher in the William Skinner and Sons Co. mill in Holyoke, Mass. View from windup end shows one of four G-E 1½-hp gear-motors driving the drying cylinders. Operator can start and stop the drive from the drying section, if necessary, by means of the push-button station shown above motor.

—in first cost, installation, floor space, and maintenance!

All the advantages you've liked in the General Electric multi-motor slasher drive are now also available to you in this new packaged G-E drive that cuts your costs four big ways:

You save on first cost substantially—because mass production of standardized parts reduces unit costs.

You save on installation because the factory-assembled power "package" needs no special foundation, contains all wiring between components except to the remotely-mounted motors and operator's controls.

You save on floor space because motor-generator set, exciter, and all control are housed in one compact unit.

You save on maintenance because all components in the power unit are easily accessible; dust, dirt, and lint are prevented from entering the power unit by large ventilating-air filters.

Both G-E slasher drives—packaged and separate-unit type—use the same performance-tested adjustable-voltage d-c speed control teamed up with amplidyne tension control. Both give you the same **automatically controlled** warp tension for most efficient slasher operation. **The payoff? Uniform high-yardage warps, fewer ends down at the loom, higher weave-room efficiency!**

Ask your machinery manufacturer or your G-E textile-mill specialist about all the operating and cost-saving features of packaged G-E slasher drives. Meanwhile, send for Bulletin GEA-5259 on standard G-E slasher drives. **General Electric Company, Schenectady 5, N. Y.**

SLASHER DRIVES FOR TEXTILE MILLS

Ask your G-E representative to arrange a showing of "Textiles Unlimited." It's G-E's full-color sound movie on how textile mills are modernizing—a More Power to America presentation.

For those tough *Special* jobs that just have to be right . . . depend on

WILDMAN "30" INTERLOCK MACHINE

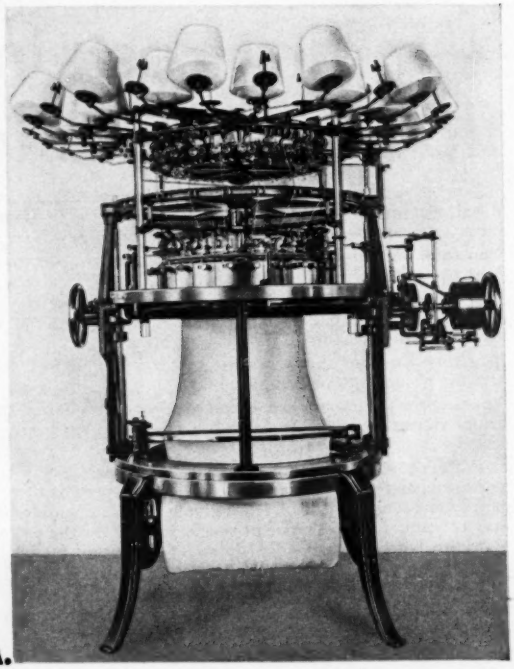
designed for

SPORTSWEAR

UNDERWEAR

DRESS FABRICS

OUTERWEAR



Yes, here indeed is versatility in production, whether for the exceptionally wide fabric or standard widths—the WILDMAN 30" INTERLOCK MACHINE assures top performance, top efficiency . . . Popular sizes 26" and 30". Also other sizes from 15" up, furnished in all cuts up to 24 needles per inch.

WILDMAN MFG. CO., NORRISTOWN, PA.

RHOZYME LA

LIQUID DESIZING AGENT

Stable in storage — Speeds Desizing — Solubilizes Starches in Minutes

Liquid form easy to handle — Can't harm cloth as acids do

No close control needed — Gives soft, mellow hand

Works safely at high temperatures

PASSES EVERY DESIZING TEST!

Be wise and thrifty.
Write today for full details of this low-cost, highly efficient new enzyme desizing agent... RHOZYME LA.

CHEMICALS FOR INDUSTRY

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

RHOZYME *is a trade-mark, Reg. U.S. Pat. Off. and in principal foreign countries.*

with a Kidde Dry Chemical Extinguisher!

Kidde
Kidde Dry Chemical Extinguishers can be used in normal standing position. Just pick up, point the horn, pull the trigger.
Streamlined diffuser horn gives better discharge pattern which provides greater space coverage and more protection for the operator.

SUPPOSE you had to fight a fire . . . wouldn't you prefer the kind of extinguisher which effectively covered 44% more space . . . and at the same time protected you from the heat?

You get exactly that kind of protection from a Kidde Dry Chemical Extinguisher. Factory Mutual Laboratories requires a 20 pound dry chemical extinguisher, in the hands of an experienced operator to effectively cover 25 square feet of burning area. But a Kidde 20 pound unit covered *36 square feet*—44% more! And the Kidde 30 pound unit covered 48 square feet as compared to the 35 square feet required by the test.

The Kidde Diffuser Horn distributes the dry chemical in a cloud-like pattern which helps eliminate splashing in burning liquids as it smothers the fire. The dry chemical absorbs most of the heat, thus protecting the operator.

Why not let the Kidde "44% margin of safety" help protect your business against fire?

Kidde

Walter Kidde & Company, Inc., 690 Main Street, Belleville 9, N. J.
Walter Kidde & Company of Canada, Ltd., Montreal, P. Q.

TEXTILE BANKING COMPANY

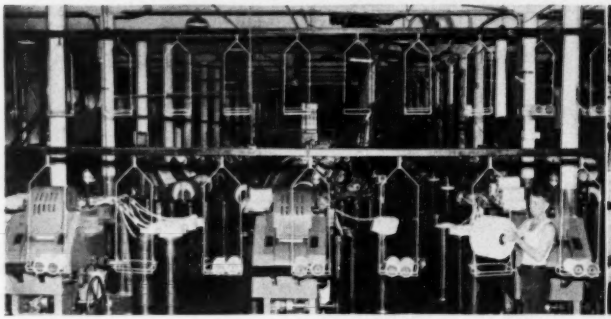
Inc.

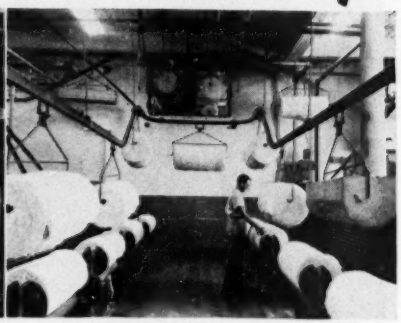
Factoring Service

Puts your sales on a cash basis
Strengthens your cash position
Relieves you of credit losses

55 MADISON AVENUE • NEW YORK

✓ Check our textile mill testimony!





Learn how others Increase Efficiency... Reduce Costs... with

"Zig-Zag"®

Continuous Power Conveyors

Yes, "Zig-Zag" Continuous Power Conveyors, designed and manufactured exclusively by Richards-Wilcox, are serving production and processing lines in leading textile mills and in practically every other type of plant. In every instance, the increase in productivity and reduction in handling costs has resulted in savings of many thousands of dollars. Specifically designed to carry light loads through confined, crowded areas, "Zig-Zag" breaks costly bottle-necks, steps up production, and releases workers for other important jobs in the plant.

"Zig-Zag" Saves Textile Mill $10,000 Annually!

Recently a leading textile mill* installed a "Zig-Zag" Conveyor to handle knitting yarn between the spinning room and winders. Four yarn men were then available for other work; oily yarn, mixed yarn, and winder-operator complaints were reduced to a minimum. Not only are annual savings estimated at $10,000, the "Zig-Zag" Conveyor quickly *paid for itself!* For indisputable evidence of the savings effected by R-W patented "Zig-Zag" Conveyors in the textile industry, and for full information about putting "Zig-Zag" to work for *you*, write, phone or wire our nearest office.

(*) Name on request.

ENGINEERED FOR ECONOMY AND FLEXIBILITY

- Horizontal and vertical units alternate in a continuous chain traveling through special steel tubing.
- Complete flexibility for installation in any plant. Easily installed, easily changed to conform to plant alterations.
- SAFE—all moving parts fully enclosed.
- Low first costs. Low Power Factor.
- Standard horizontal or vertical curves —two-foot radius.

1880 RICHARDS WILCOX R-W AURORA Reg. U.S.Pat. Off. 1951

OVER 71 YEARS

Richards-Wilcox Mfg. Co.

"A HANGER FOR ANY DOOR THAT SLIDES"

AURORA, ILLINOIS, U.S.A. *Branches in all principal cities*

SLIDING DOOR HANGERS & TRACK • FIRE DOORS & FIXTURES • GARAGE DOORS & EQUIPMENT
INDUSTRIAL CONVEYORS & CRANES • SCHOOL WARDROBES & PARTITIONS
ELEVATOR DOOR OPERATING EQUIPMENT

Textile Industries
Vol. 115 • June, 1951

News in Brief

Good Industry for Work. A recent report by the Public Relations Committee of the Alabama Cotton Manufacturers Association shows that (1) textile employees have the lowest incidence of tuberculosis of any industrial employees (2) they have longer expectancy of assured work (3) more employees above the age of 55 are in textiles, and (4) it is not classified as a hazardous industry.

Steal Yarn. Four men recently were charged with stealing wool yarn valued at more than $30,000. Serving as clerks in the mill, they sold goods valued at $4-$6 per pound for twenty cents a pound.

Nylon Hosiery Mill in Germany. A factory to manufacture nylon hosiery has been opened in Frankfurt (West Germany). Raw material now is being obtained in the U. S., but later will be secured in Germany. The sales plan adopted is to have the women buy one and a half pairs at a time (Americans usually buy one or two pair).

Suggestions by the Thousands. Living up to the company motto "Think," employees of IBM Corp. last year turned in 41,617 suggestions for improving service to customers, advancing product design, and increasing production. The company rewarded 5,971 employees with $121,028.

Knitting and Allied Crafts Exposition in 1952. The Knitting and Allied Crafts Exposition will again be sponsored by the National Knitted Outerwear Association and the Underwear Institute; the show will be held in Grand Central Palace, New York, during April 1952.

Holland Machinery House. Strake's Textile Engineering Works, Ltd., is the first factory in Holland to make textile equipment, such as looms, finishing, and knitting machines. Heretofore the textile machinery has been imported.

All Out for Wool. Twelve clothing manufacturers have announced that they are basing their 1951 clothing lines on wool in a concerted effort to maintain "the standards which have made our labels symbols of integrity." Their statement said they "could replace wool with inferior, cheaper fabrics made of other fibers and turn out imitations of our present products . . . . labels would quickly cease to be guarantees of integrity. . . "

Scrap Drive. To ease the critical supply situation in iron and steel scrap, a program fosters intensive collection, segregation, and economical use of scrap. Textile mills can aid materially in such work.

Research in Rugs. "In our com-

FROM BACK OF THE CURTAIN

Employees of Joanna (S. C.) Cotton Mills Co. had the opportunity recently to get first hand reports on life back of the "Iron Curtain." Four Russians who had been imprisoned by the Germans during the war and later made their way to the U. S., sat before an audience of mill employees and answered questions and gave a description of life behind the Iron Curtain.

Those taking part in the panel discussion are, left to right in the photograph, Mrs. Kenenia Kondratyeva, former typist in the regional office of the Railroad Trade Union; Boris Sablin, former foreman in a machine tool factory; Andrei Naydenov, former plant supervisor; Boris Mokritzky, former worker in a sugar refinery; J. K. Waits of the Joanna Junior Chamber of Commerce; and Mrs. Ada Siegel, interpreter.

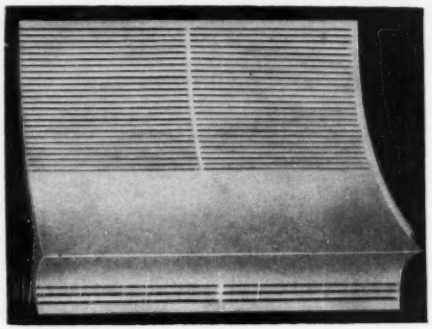
Waste and wear are the extra price some manufacturers pay for inferior cylinders and card screens: premature failure of spinning equipment due to vibrating cylinders . . . good cotton lost due to poorly-built screens. This is *needless* expense!

Needless, that is, if you standardize on Jenkins engineered products.

Jenkins spinning cylinders are die cut and formed for dimensional perfection, dynamically balanced by a Jenkins process which eliminates damaging vibration. Their steadier, smoother performance gives longer wear *throughout* your spinning frame.

Card screens made to Jenkins precision standards are uniform in every part. Streamline features found only in Jenkins screens assure close setting to card cylinder, improving yarn quality and eliminating excessive fly waste.

A simple comparison of cost figures will show how Jenkins engineered products can save you money. Write us, or ask a Jenkins representative.



JENKINS METAL SHOPS, INC.
GASTONIA, NORTH CAROLINA
Serving the Textile Industry Since 1913

JENKINS
ENGINEERED PRODUCTS

"RIGHT ANGLED" SOCK PREVENTS COLD FEET

Demonstrated here is a new heavy sock that is said to provide better fit for all foot sizes and to keep feet dry and comfortable under extreme conditions of either wet or dry cold.

In the sock, which has a terry or tuft stitch throughout, the boot and foot are at right angles due to a specially constructed heel and toe, enabling one or more pairs to be worn without bunching and consequent chafing of the instep.

The terry stitch increases the thermal insulation, it is claimed, and has the same effect as many layers of foot covering.

The sock was developed by Scott & Williams after the U. S. Army had consulted them about functional characteristics most desired in the Army "ski sock."

pany today the major portion of our interest lies in our research organization. Many improvements in production methods have resulted from this, and many new products are constantly undergoing experimentation." — Steele L. Winterer, A. & M. Karagheusian, Inc.

"Not Substitutes," Says Pepperell. Following taken from "The Pepperell News Sheet" published by Pepperell Manufacturing Company: While some people might think of "synthetic fibres" as substitutes, such is not the case at all. According to Webster, synthetic means a composition or combination of parts, elements, etc., blended to form a whole. Thus Dynel, Rayon, Nylon, Orlon, and other new fibres are not substitutes for existing natural fibres, but are man-made to give properties to fabrics not possible through other existing fibres.

Damage to Cotton. Textile mills processing cotton are complaining that insufficient care in labeling and shipping is evident. Specifically, the mills point to (1) stenciling of numerals on bales with ink so that ink gets on the stock (2) freight cars are not cleaned prior to shipment, and (3) stock is not covered with tarpaulins when shipping by truck, all of which cause hardships to mills that must receive damaged or dirty cotton.

News in Brief

Renegotiation. For information on contract renegotiation, write for the recently published Fact Sheet; Department of Defense, Office of Public Information, Washington 25, D. C.

Recording Tensometer. Funds have been allocated to Lowell Textile Institute for the construction of a recording tensometer; the pilot model is said to have been used successfully for measuring various tensions in yarns as they are processed.

60-Gauge Stocking Accepted. The American woman wants a sheer stocking first of all, according to Anna Diehle, hosiery buyer for Bonwit Teller, who points to the acceptance of the 60-gauge, 15-denier hose. There will be only a very small place for a heavier denier in combination with this gauge, she points out.

$3380 for Suggestion. Ken Keich of Calco Chemical recently won $3380 for an employee suggestion. He suggested keeping a steam valve turned off for 30 minutes during one of the manufacturing processes.

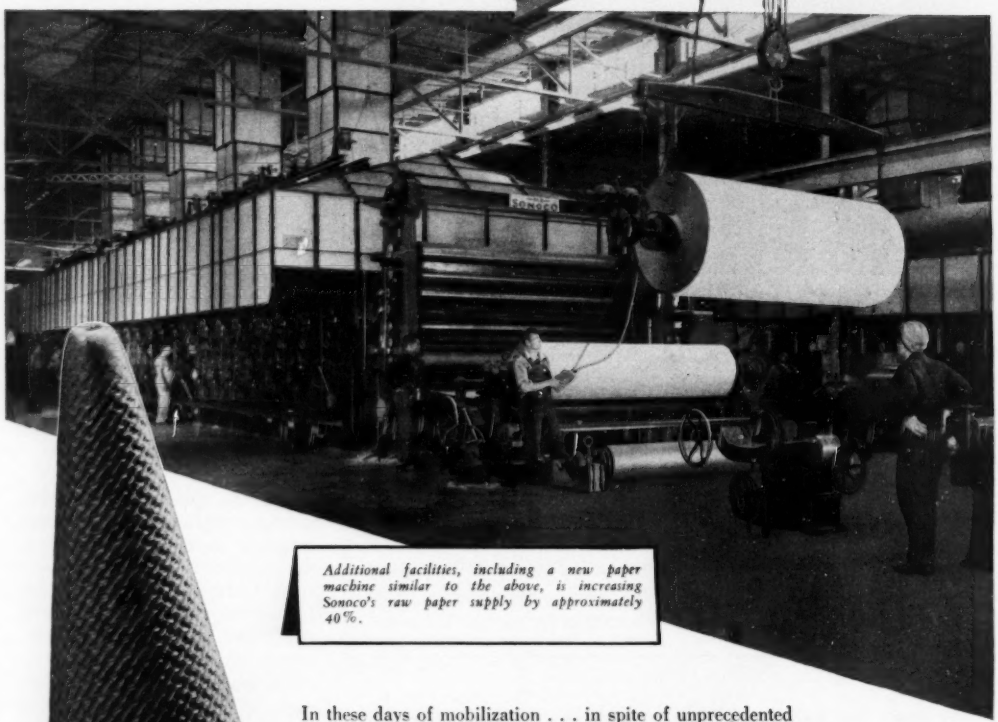
Can Solder Glass to Metal. Engineers of GE can solder glass to metal in a process which makes a bond stronger than the glass itself. The process is presently being tested for industrial applications.

Wool Felt to Defense. The wool felt industry is devoting practically all of its resources to production of war materiel or industrial end products for defense. Fashion and apparel felts for civilian use may not reappear for many months.

Index of Military Purchasing Offices. Department of Defense has prepared a 16-page listing entitled "Index of Military Purchasing Offices," which serves as a guide to

SERVING THE TEXTILE INDUSTRY SINCE 1899

SONOCO breaks another bottleneck



Additional facilities, including a new paper machine similar to the above, is increasing Sonoco's raw paper supply by approximately 40%.

In these days of mobilization . . . in spite of unprecedented production demands . . . SONOCO continues to serve the Textile Industry as a dependable source of supply for paper carriers.

Dependability of service has been largely responsible for SONOCO'S position of leadership the past fifty years; and, today, SONOCO is engaged in a further program of expansion that will insure a continuance of that service.

Paper production is being increased and manufacturing methods improved so that the Textile Industry can continue to depend on SONOCO for its paper carrier requirements.

SONOCO PRODUCTS COMPANY

BRANTFORD ONT. | HARTSVILLE S. C. | MYSTIC CONN.

sonoco SERVES THE WORLD PAPER CARRIERS

REG. U.S. PAT. OFF.

DEPENDABLE SOURCE OF SUPPLY

industry in selling to the military departments. Get copies from Central Military Procurement Information Office, Munitions Board, Pentagon, Washington 25, D. C.

Union — Management Debate Suggested. Alexander McKeown, general president of American Federation of Hosiery Workers, recently challenged the management of a hosiery concern to "debate the issues before all employees" rather than exchange accusations indirectly through handbills or letters to the employees.

Milium Brochure. Deering, Milliken Company's Milium, the lining fabric that is said to work like insulation in a house, is described in a new educational folder which outlines how the fabric fits into the manufacturer's and retailer's picture.

Use WSB Official Forms for Rulings. Instead of informal written requests for rulings, henceforth those desiring rulings on wage or salary increases from WSB must submit them on special forms which are known as Form No. 1 and available at field and regional offices.

Steel Strapping Shortage. The textile industry may soon have a shortage of steel strapping unless NPA provides sufficient priorities, according to information from Signode Steel. Although the strapping industry has launched vigorous remedial action, it is recommended that the textile industry individually and collectively also take action.

Military Theme in Advertising: Careful! Firms desiring to use the military theme in advertising copy will be bound by certain restrictions. When in doubt submit copy to Lt. Col. Joseph S. Edgerton, Security Review Branch, Office of Public Information, Room 2C766 Pentagon, Washington. A quick reply is promised.

Cotton and Rayon Oppose. National Cotton Council has strongly opposed tax write-offs for expansion in domestic high tenacity rayon capacity on grounds that the plants will operate after the emergency period. And in some circles rayon men criticize Federal subsidies for research on cotton, under Department of Agriculture programs.

Use NPA Field Offices. The Munitions Board requests manufacturers of products to seek assistance from the field offices of NPA, when short of raw materials, rather than from the armed services.

Ga. Tech Research. At the Engineering Experiment Station, Ga. Tech, Atlanta, research project expenditures currently are at the rate of more than a million dollars a year. The new Hinman Memorial Building will permit further expansion in the station's services.

Nep Potentiometer. An instrument to determine the nep potential of cotton is now being developed at the Textile School of North Carolina State College with the assistance of the Southern Regional Research Laboratory of the U. S. Department of Agriculture, according to Ivan Feng of N. C. State. Though no description of the instrument was given, it was stated that its purpose would be to aid breeders, ginners, and manfacturers in determining any cotton's tendency to nep. Its use would permit predictions as to neps per 100 sq in. based purely upon an examination of a sample of the cotton in raw stock state.

ITT Cited. A Marshall Plan "Certificate of Cooperation" has been presented to the Institute of Textile Technology at Charlottesville, Va., on behalf of the Economic Cooperation Administrator, in recognition of the assistance rendered by the Institute to a team of visiting British textile experts brought to this country to study American techniques under the ECA technical assistance program.

(*More "News Briefs" on page 219*)

VALUE OF RESEARCH IN LAYMAN'S LANGUAGE

This group of researchers is explaining in layman's language to the Rotary Club at LaGrange, Ga., what research means to industry and its relation to the present high standard of living in America. All are members of Research Division, Callaway Mills Company, LaGrange.

AN EXECUTIVE Views

THE NEWS IN TEXTILES

Prepared by a man who is closely identified with the textile industry.

The Great Price Dilemma

WHAT HAS been happening in Washington during the months since the North Korean army first crossed the 38th Parallel on June 25, 1950, is indicative of what happens to the American economy when it is controlled. It is no secret that the imposition of the various price controls has affected the textile industry with a malady from which it may be sometime in recovering.

To review a moment, you will recall that during the summer and fall months following the outbreak of the Korean War an avalanche of public relations material was issued requesting all segments of the population to hold the price line. In December the pricing agency sent out a number of telegrams to important manufacturers, some of them in the textile industry, which urged that prices not be increased unless the Office of Price Stabilization were notified. As might be expected, these telegrams received wide publicity, and the response was quite varied.

Some manufacturers considered it their patriotic duty to hold the price line, and many of them notified their customers in writing that they would comply with the request from Washington. There were others, however, who resented this governmental intrusion into their price affairs and who continued to follow their customary policies of basing their prices upon the cost of production. A third segment suspected that there might be more to the matter than met the eye and began to boost their prices in the hope that the impending freeze would catch them at a high point.

Which of these classifications was the most patriotic? Which of the three should be penalized and which should be rewarded?

The answer, of course, is obvious, but that was not how things worked out. The conscientious manufacturer who felt that his duty lay in trying to hold the price line at the December 1 level found that, like many another patriot, he was to taste the bitter fruits of his own idealism.

District of Confusion

On January 26, 1951, there descended from Washington a General Ceiling Price Regulation, which, as best we can understand it in retrospect, set up the period from December 19, 1950, to January 25, 1951, as the base period for determining ceiling prices. The regulation was interpreted in different ways in different offices. Some felt that if you made a contract to sell 80-squares for 29 cents and the contract was made during the base period, that 29 cents could be your ceiling for that fabric even though you were not making delivery for several months. This interpretation for many has been based on wishful thinking because many of the leading legal lights warned that the regulation might possibly mean that your ceiling was the highest price at which you *delivered* 80-squares.

Nevertheless, for some weeks the textile industry drifted back and forth in a state of confusion with no one being quite certain just what the regulation did mean. The industry was hesitant about going to Washington and asking for an interpretation because it was felt that the answer would undoubtedly be unfavorable.

In short, those who followed the liberal interpretation of the act were operating on the old principle that their action might later be determined unlawful, but that it would be difficult if not impossible to lock up everyone who violated the regulation. This, too, may have been wishful thinking.

Thus it was that the patriotic manufacturer to whom we referred above—the man who heeded the telegram from the Office of Price Stabilization and held his prices at the December level—found his prices frozen at that point, while his less conscientious competitor found his prices frozen at the point to which he was able to boost his

LABOR RULINGS

Employer's willful violation of court decree enforcing NLRB order is punished as criminal contempt for first time by U. S. Court of Appeals, thereby adding heavier penalties of fine and imprisonment for enforcement of such decrees, according to recent NLRB release.

Contract obligating company to pay committeemen of the union for time lost in handling grievances does not cover time spent after working hours settling grievances.

Pre-shift activities which were a part of the work employee ordinarily performs during his regular shift must be paid for whenever performed.

prices. It was a sad day for the patriots.

More Confusion

But the end of the confusion had not come. In an amendment dated February 23 the Office of Price Stabilization took cognizance of the fact that some manufacturers were interpreting the January 26 regulation as meaning that their ceiling was the highest price at which they had *contracted* to deliver. This happy thought was dissolved by OPS and the controversy was ended for all time by Amendment 2 to GCPR. From that date forward, we were put on notice that our ceiling was our *delivered* price.

That would seem to be confusing enough, but on April 24 a general order was issued by OPS which set up a rather involved system for determining prices in most American industries, including, for the time-being at least, the textile industry. As this is written, it appears that within the next few days a cotton textile ceiling order will be issued by Washington which will set up a base period of July 1, 1949—July 1, 1950, and your prices will be determined on the basis of your highest delivery, sale or contract to sell or firm quotation during that time. This will, of course, result in a different price for every textile mill. It is indicated that the order will make it possible for you to add to your base period price certain increases in costs such as those for cotton and wages, but computing such increases will turn out to be a laborious task for most mills.

It also appears likely that the effective date of the order will be late May or early June, and this brings up still another question.

What Will Congress Do?

The Defense Production Act of 1950 expires June 30, 1951. What Congress will do about the Act is a matter of opinion, and few people seem to have very strong ideas as to what the result may be. If Congress changes the rules of the game, however, then we may find ourselves operating under an entirely new order within the next few weeks.

With the confusion we have already had in the textile industry because of price controls, it is going to be rather remarkable if we are able to maintain anything like maximum production. It has been proven time and again that a free economy cannot operate at maximum productive capacity when ham-strung by impractical, illogical and unreasonable regulations. That is certainly true of the textile industry, and World War II proves it.

What the outcome will be no man knoweth. We do know that during the past several months the textile industry has been through the fires of indecision, and if this sort of thing keeps up, we are going to wind up with a bankrupt industry and a bankrupt America.

TWUA'S RESEARCH DEPARTMENT REPORTS ON PROFITS OF SOUTHERN TEXTILE INDUSTRY

(The following statements are extracted from a recent report prepared by the research department of the Textile Workers Union of America. The report is identified as Southern Cotton-Rayon Strike Research Memo No. 3.)

The Korean war has brought a bonanza of profits to the southern textile industry. Financial reports of corporations with southern mills showed a sharp upturn in the middle of last year and profits have been skyrocketing ever since. The mills earned approximately $1,200 in profits before taxes for every wage earner employed. Sixty cents went into the average company's profit account for every man hour of work performed by a wage earner.

In 1950 the southern textile corporations earned 28½% of net worth (before taxes) and in the last quarter the rate of return averaged well over 35%. The southern mills were piling up profits at about twice the average rate reached in the best three years of its previous history!

The industry's ruthless exploitation of the seller's market which resulted from the Korean outbreak has been "explained" by apologists as merely passing on increased costs . . . facts show that the industry has not merely passed on the increases in costs . . . was used as an excuse for widening the industry's profit margin . . . mills actually raised prices by 2½ times the amount necessary to cover increased cotton costs.

The profiteering price policy of the industry has cost the United States Government dearly.

(Five tables accompanied the TWUA report.)

June 18-22—Annual meeting, **American Society for Testing Materials**, Chalfonte-Haddon Hall, Atlantic City, N. J.

June 21-23 — Annual convention, **Southern Textile Association**, Mayview Manor, Blowing Rock, N. C.

July 16-22—Textile portion, **Gordon Research Conferences**, sponsored by American Association for Advancement of Science, Colby Junior College, New London, N. H.

September 10-14—Sixth **National Instrument Conference and Exhibit**, Sam Houston Coliseum, Houston, Texas.

Sept. 13-14—Fall meeting of the **Fiber Society**, Swampscott, Mass.

Oct. 4—Sixth annual meeting, **Carded Yarn Association, Inc.**, Carolina Hotel, Pinehurst, N. C.

Oct. 17-19—Annual convention, **American Association of Textile Chemists and Colorists**, Hotel Statler, New York, N. Y.

Oct. 18-19 — Annual meeting, **North Carolina Cotton Manufacturers' Association**, Carolina Hotel, Pinehurst, N. C.

Nov. 8-9—Annual meeting, **Textile Research Institute**, New York, N. Y.

The New DAYCO Cot
"COT O' THE LOT!"

Now! New freedom from ends-down and lap-ups, with the greatly increased fiber repellence of the new Dayco Cot. Man-made of American Rubber, it is specifically compounded for fiber non-attraction. An all-around performer, too—use it run-of-the-mill on cotton, wool, blends or synthetic fibers. And for *life*, you've never seen a cot like it—where mills were getting 60 to 90 days, Daycos upped cot life to 3 and 5 years. No wonder cost-conscious Superintendents call it, "Cot o' the lot!"

Now that down-time and maintenance are more costly than ever you can hold them down with this famous Dayco team. Try them on your frames—they increase yarn uniformity, reduce ends-down and lap-ups, outlast any cots or aprons you've ever used! Write:

DAYTON RUBBER CO., Textile Division, Woodside Bldg., Greenville, S. C.

The Dayco Long Draft Apron
"BEST IN THE LONG DRAFT!"

Precision-made of the finest American Rubber, the Dayco Long Draft Apron yields up to 10% more uniform yarn. Caliper it against the best aprons now on your frames. You'll find it excels in uniform thickness, diameter, and width. Dayton's exclusive method of marking for 2-apron systems insures perfect fit regardless of age or type of cradle. You can change apron length by as little as 1/64" in diameter. Says one Overseer: "First apron I ever saw, you wouldn't lose a few when starting up!"

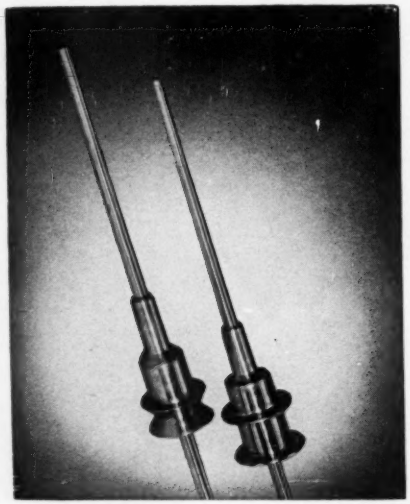
Torrents of cloth bolts pour from the mills, as Dayco and Thorobred textile machinery products help make American women the best dressed in the world!

Dayton Rubber

New Fluted Rolls

Now Available at Substantial Savings

New automatic machinery recently installed makes it possible for Southern Spindle and Flyer Co. to manufacture FLUTED ROLLS for spinning and flyer frames at LOWER costs. We pass these savings on to you.
Compare our prices for all types of NEW fluted rolls with the cost of reworking OLD rolls. You'll be pleasantly surprised at the very small difference in cost.
All of our new fluted rolls are made with screw necks. They're precision made of the highest grade steel and are held to close tolerances. They can be finished also with hard chrome plating.



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for further information

50TH ANNIVERSARY OF SERVICE TO THE TEXTILE INDUSTRY

Southern SPINDLE & FLYER COMPANY
821 West First Street • Phone 2-1329 • Charlotte 1, N. C.

NEW Equipment AND MATERIALS

Loom cadence control (Walworth).

Loom Cadence Control Prevents Vibration

The Chronometric Cadence Control is described by the manufacturer as a complete system of electrical controls for application to looms to lock the lays of two looms opposite each other in such a position that their moment of inertia is neutralized and thus cannot be built up through all looms locking in step to cause building sway.

A time control on the shipper bar connects the loom cam timers in circuit with control timer; this, upon proper impulse, disconnects two legs of the main drive motor from the three-phase line and inserts a tapped resistor of calculated value. This slows one drive motor until loom cams disconnect control timer.

With this system the load of the loom on the motor as well as the speed of the locking can be controlled by the loom fixer, the manufacturer claims, serving as an advantage after new parts are added, as adjustments are made.

A control indicator light allows for quick inspection to ascertain that components are functioning.

Walworth Controls Co., 131 Main St., Rocky Hill, Conn.

For additional data, request item F-304, using business reply card on page 218.

Special Uncurler for "Loopless Toe" Hosiery

Now in production is an uncurler which has been specially designed for handling stockings seamed by the "loopless toe" method.

It is designed with a double prong extension at its delivery end that enables the stocking to be carried farther into the feed cups, eliminating the need for the operator pulling on the stocking while starting it into the machine, and also preventing any possibility of the stocking being disturbed after once having been placed properly in the uncurler.

While designed specifically to overcome the difficulties of seaming "loopless toe" hosiery, the new uncurler works equally well for conventional type looped hosiery, the manufacturer advises.

Union Special Machine Co., 407 N. Franklin St., Chicago 10, Ill.

For additional data, request item F-101, using business reply card on page 218.

Wool Chemical Buffers Harsh Acting Chrome

The dual action of Maxitol No. 10, a chemical for wool, is said to recommend its application for preventing harshness, loss of tensile strength, and uneven dyeing experienced in the chromate dyeing of wool.

The chemical actually becomes a part of the wool fiber and is resistant to the action of the bichromate, the manufacturer claims. Because Maxitol is chemically bound to the wool, it is reported that, in addition to its buffering action on chrome, further protection is provided throughout subsequent processing operations, and even for the life of the fiber.

Wool treated with the chemical will, as a result of this protective action, show less deterioration and loss of tensile strength, and will gain a softer and loftier hand, according to the manufacturer. As a dye leveler, Maxitol is highly efficient; it keeps dyestuffs well dispersed and facilitates their penetration into heavy fabrics and hard twisted yarns.

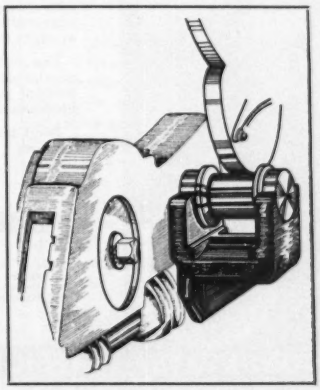
Dexter Chemical Corp., Boulevard P.O. Box 1, New York 59, N. Y.

For additional data, request item F-110, using business reply card on page 218.

Pitman Roll Features Ball Bearings on End

New Saco-Lowell spinning frames are equipped with a redesigned pitman roll in which a solid roll with gudgeons is utilized; and by supporting the load through ball bearings on both ends of this roll no limitation is encountered with regard to size of bearings that may be used. The roll itself is solid, eliminating

New pitman roll for spinning frames (Saco-Lowell).



CROUSE-HINDS High Efficiency LIGHTING EQUIPMENT...

Type EVF Explosion-Proof and Dust-Tight
Fluorescent Lighting Fixtures
1, 2, 3, or 4 -Lamp

. . . for Hazardous Locations

Crouse-Hinds explosion-proof lighting fixtures exceed the requirements for service in highly explosive atmospheres. They are designed to operate at a temperature below the ignition temperature of the gas-air or vapor-air mixture. They are so strong that they will resist internal explosions without damage and so tight that they will prevent the escape of flames or burning gases which might ignite the surrounding atmosphere.

Crouse-Hinds dust-tight lighting fixtures assure safety in locations that are hazardous because of the presence of combustible dust.

. . . for Wet and Corrosive Locations

Crouse-Hinds vaportight lighting fixtures are ideal for use in boiler rooms, powerhouses, shower rooms, tunnels, loading docks, building entrances, and all indoor and outdoor locations where exposed to moisture and rain, non-explosive vapors and gases, or non-combustible dusts.

Hundreds of industrial lighting fixtures are listed in Crouse-Hinds Condulet Catalog.

. . . for Protection

Sabotage thrives in darkness. The most reliable and cheapest form of protection against night prowlers is LIGHT! Crouse-Hinds floodlights project powerful beams of light that bathe all approaches to your property with glaring radiance, killing darkness and shadows and compelling everyone to be more visible at night than in broad daylight.

The protective power of light should be used in all important municipal and industrial locations. The floodlighting of industrial plants serves a double purpose. It helps to boost production in addition to the security it provides.

Send for your copy of Bulletin 2565, "LIGHT! Protect Your Property."

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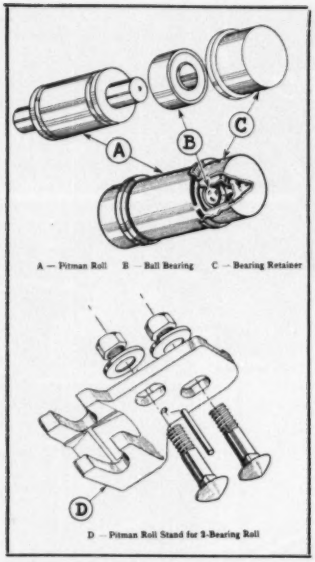


Details of S-L pitman roll.

the problems of maintaining the hardness and contour of the thin shell which was used when the bearings were placed inside the roll.

As may be seen in the accompanying sketches, the bearings rest on the pitman roll stand so that the builder cam turns on a solid arbor, the gudgeons of which revolve in two ball bearings.

Due to the design of this new pitman roll the stand itself had to be redesigned. The changes in design prohibit the use of the new pitman man roll in old pitman roll stands; however, the new pitman roll can be applied to existing frames by discarding the old pitman roll and pitman roll stand, and applying the two as a single unit.

Not only is this development reported to have proven completely worthwhile on spinning frames and twisters, but it is said to have been exceptionally valuable for heavy-duty twisters.

Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass. (F-303).

Textile Softener

A new anionic substantive textile fiber softener, "Softex 460," is now being manufactured. In addition to its high substantivity—resisting removal from textile fibers by washing after application—the product exhibits excellent softening properties for both cottons and spun rayons, according to the manufacturer. This softener is said to be outstanding in its small effect on fading of dyestuffs and lack of yellowing of white fabrics.

Softex 460 is alkaline in nature. Because of its even distribution through the yarn package it is particularly well suited for package dyeing.

E. F. Houghton & Co., 303 W. Lehigh Ave., Philadelphia 33, Pa.

For additional data, request item F-105, using business reply card on page 218.

10-Ton Lever Set Padder

This two-roll, ten-ton lever set padder is made entirely of fabricated steel and is designed with take-out cheek for removing either roll individually.

Other features: stainless steel tank and guide rolls, end splash guards, guards for shaft extensions.

Machine is manufactured in widths to meet customer requirements.

Cook-P&N Machine Co., Inc., 365 Dorchester Ave., Boston 27, Mass.

For additional data, request item F-109, using business reply card on page 218.

Electric Brakes for Warpers

Development of a new series of electric brakes and clutches that are especially adaptable for use on high-speed warpers, has been announced.

Use of the equipment will mean a substantial increase in the output of the warping machine, according to the manufacturer.

Several textile machinery manufacturers have begun using the new brakes and clutches, it is claimed. The new equipment is also suitable for installation on existing warping machines.

The adoption of the electric brakes is said to have made these improvements possible in the warping operation:

(1) The machine can now be stopped almost three times as fast as formerly, avoiding loss, tangling, and snarling of warp ends, thus making it possible for the operator to repair end breakage faster than before.

(2) Skidding of the yarn with its resultant damage is virtually eliminated, and a higher quality end product is assured.

(3) The simplified brake system

requires no adjustment for wear, with the result that maintenance expenses are reduced.

The electrically-operated system is a self-synchronizing unit and requires only simple dial settings.

Development of a companion series of electric brakes and clutches for use on textile looms is also under way, the announcement stated.

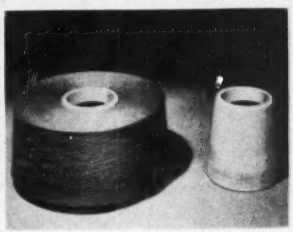
Warner Electric Brake & Clutch Co., South Beloit, Ill.

For additional data, request item F-111, using business reply card on page 218.

Portable Dehumidifier

A completely portable ⅛ hp Humidry unit is designed for a wide range of dehumidification applications from

(*Continued on page 165*)



Foster Model 102 Now Winds Cones for B-C Creels

Equipment recently developed for the Foster Model 102 winder enables the machine to wind package dyed yarns at high speeds (up to 715 ypm) onto 4-inch traverse, slight taper cones that fit in a Barber-Colman warper creel.

According to the manufacturer, this new equipment is especially effective in handling of fine yarns ranging from 50s to 80s. The cone is 4 inches in diameter at the base and will hold up to 3 pounds of yarn. It is said to be completely free of ribbon wind and to draw off very easily in the creel.

Foster Machine Co., Westfield, Mass.

For additional data, request item F-103, using business reply card on page 218.

here's the New Method
for drying Wool Nylon and Rayon Slivers

ROSS TOP DRYING SYSTEM

AIR DRYING WITHOUT DISTURBING THE FIBRES

at THE BARRE WOOL COMBING COMPANY, LTD., South Barre, Mass.

This ROSS straight-pass dryer introduces an entirely new principle for the drying of top. How to utilize air circulation without such material as fibres being blown about the place has always been a drying problem for the textile industry. Now, with this new ROSS Dryer, the slivers are not even disturbed although the volume of air circulated is exceptionally large. Spinning difficulties due to intertwining are eliminated, more even drying and better quality is assured. Another major achievement born of ROSS' long experience with drying problems.

ROSS KS SYSTEMS

J. O. ROSS ENGINEERING CORPORATION

MANUFACTURERS OF AIR PROCESSING SYSTEMS

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ROSS ENGINEERING OF CANADA, LIMITED, MONTREAL, CANADA • CARRIER-ROSS ENGINEERING COMPANY, LIMITED, LONDON, ENGLAND

Shorts and Remnants

Beware!—
Students Grow Up

A letter from a student in a textile school asks if it is possible for him to receive technical catalogs published by a certain equipment manufacturer. He explained that he has written the supplier, but received no answer.

TI receives such letters from students occasionally.

For the most part the equipment manufacturers are glad to assist the students by furnishing technical literature; it is a farsighted policy and an excellent way to keep the company name before a future prospective buyer.

Some manufacturers don't bother with sending students the literature they request. They probably have their own reasons which they consider legitimate—but refusal of a school-boy's request doesn't make a friend; even a letter explaining the company's policy would be appreciated.

Well can we remember when, as a college student and attending one of the textile shows, a salesman for an exhibiting company demonstrated acute interest in us until he discovered we neither had purchasing power nor anyone to influence in purchasing at the time. It was a direct rebuff. It didn't leave us feeling very friendly then—and we remember it now.

Taking care of the college boys and textile students in their small requests for technical literature and aid may take some time, but it's a good investment.

Let's not ignore them; for beware, they may grow up.

Filling Quill Survey

". . . . another phase of operation . . . would like to get comparative data on . . . number of quills used per loom or quills used per filling spindle and also number of quills broken . . ."

PRINT CLOTH MILL

► Much information was contained in previous survey, published in this magazine. No reprints available. Write Bibliofilm Service, U. S. Dept. of Agriculture Library, Washington, D. C., and ask for photostat of article from January 1939 issue of "Cotton," story beginning on page 44 entitled A Survey on Filling Quills—Life, Practice, and Preference.

"Industrial Engineering"

"We are conducting a Time-Study Seminar for our superintendents and overseers . . . recently came across a reprint you prepared entitled 'Industrial Engineering for the Small Plant' by George E. Tucker. If they are still available, I would appreciate 40 copies."

D. E. TOUGH
Hamilton Cotton Co.
Hamilton, Ontario
Canada

► Sorry, no more reprints of this one. Appeared in May 1949 issue.

Training and PR

"Among the many helpful and timely features . . . your editorial on training and the one on public relations struck my fancy, both of them from end to end. Indeed some of the barbs in the public relations editorial could appropriately be shot at attempts to specialize industrial relations also."

THOS. H. QUIGLEY
Industrial Ed. Dept.
Georgia Tech
Atlanta

JUST WHAT THE MILLS NEED

Now the mills can really get production. Here's a new electronic hygrometer (Minneapolis-Honeywell) so sensitive that it can measure the amount of moisture a tear adds to the atmosphere. Mary McGuinness peeks through the sensing element of the electronic control. The device—held close—can register the moisture in the air from Mary's eyes. When connected to electronic amplifier it can control humidity down to a fraction of one per cent. Anyway, that's what we're told. The hygrometer, for use in industrial plants, will be released early next year.

AVA

" . . . noticed with much interest your article on 'Activity Vector Analysis' in March 1951 issue . . . Would like information. . . "

E. H. THOMAS
Barber Mfg. Co.
Charlotte, N. C.

" . . . article on 'Activity Vector Analysis' . . . very interesting . . . securing more information on this testing procedure. . . ."

R. A. BAUER
Stearns & Foster Co.
Cincinnati

". . . can certainly vouch for everything Mr. Eastman says in his article [on AVA] . . . "

J. A. NASMITH
Universal Winding Co.
Manchester, England

Combination Clearer

" . . . January issue, at page 167, we see a very interesting information: The combination clearer on drawing frames.

"We would like to put this device on our drawers. However, as we cannot exactly see on the photo the way the whole device is arranged, and because we do not exactly understand the English technical terminology, we would be much obliged if you could help us to realize this very important device in sending us a drawing of the arrangement.

" . . . apologize for the trouble we are causing. . . "

FOREIGN

► No trouble when a reader wants service. Device is not available from an industrial manufacturer; in this case the inventor agreed to make a sample of the combination clearer for the reader's use.

Proper Balance

In Textile Spring-Beard Needles, it's the careful balancing of needle resiliency and needle length that assures superior knitting results. At every stage of production, Textile Needles are constantly checked for proper balance.

Balance is just one of the many advantages you get from Textile's scientific controls—automatic and electronic. Textile Needles are right at every point, in every detail.

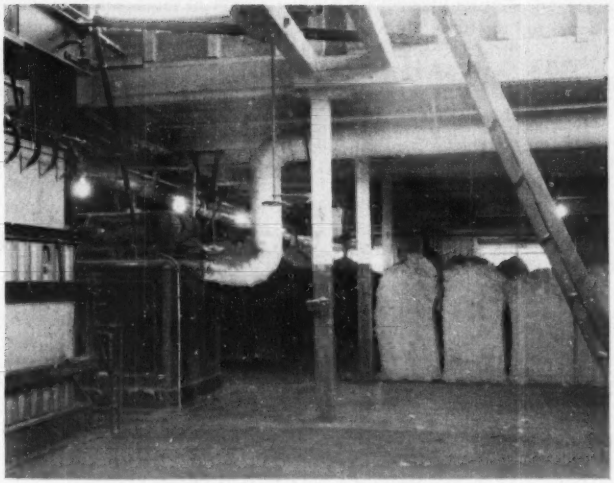
TEXTILE MACHINE WORKS, READING, PENNA.

Textile

SPRING-BEARD NEEDLES

For Full Fashioned and Warp Knitting

Textile Industries
Vol. 115 • June, 1951



IN THE MIXING ROOM are five F-5 feeders, a vertical opener, and (at extreme left) a double box bale press.

By using a premixing room, less space is required to attain a thorough blend with both white and dyed cotton raw stock.

Premixing and Rebaling

assures thorough blend at Fieldcrest Blanket Mill

Staff Prepared

EXCLUSIVE

SEVERAL years ago, the management at the blanket mill of Fieldcrest Mills, Draper, N. C., realized that inadequate mixing was the cause of the production troubles, especially streaks in the filling of the plaid cotton blankets.

In order to avoid streaks in the colored blocks, the mill had found it necessary to resort to the expensive practice of "tailing out" on colored yarns. They felt they could eliminate many of their troubles, particularly on dyed raw stock, but also on the white, if they could get better mixing ahead of the pickers.

Space in the opening room was so limited that it prevented more mixing than was being done at the time. The room has in it five F-7 Saco-Lowell cleaning and blending feeders and a vertical opener. Four of the feeders are used for white raw stock, and one feeder and the vertical opener are used for the colored. Stock from this room goes directly to the pickers.

Floor space in this room is so limited that only twenty-four bales of white are opened at a time, and the mix is made from twelve of these. Adequate mixing at this mill would require at least forty bales running and an equal number waiting to be run.

Mixing Room. Fieldcrest solved this problem of an inadequate mix by adding a separate mixing room which is used along with the opening room to provide a thorough mix in far less space than would be required for an opening room large enough to do the job.

The mixing room at Draper has in it five F-5 Saco-Lowell feeders, all of which feed to an apron leading to a vertical opener. Floor space in this room permits running cotton from 50 bales at a time.

Cotton received from trucks or railroad cars is stored in a warehouse, and from this warehouse, it is taken in 50-bale lots to the mixing room, where the bales are opened and the raw stock fed to the feeders. After passing through the vertical opener, it is blown to a condenser, and from there to a

Daylight Fluorescent Dyes on Mercerized Cotton

Successful application of daylight fluorescent dyes to mercerized cotton has been achieved following two years of joint intensive research by Aberfoyle Mfg. Co., Philadelphia, Pa., and Switzer Brothers, Inc., Cleveland, Ohio, the companies announced recently.

The project is said to have resulted in the production of a completely new type of yarn with a different chemical structure than any known yarn heretofore produced. The yarn will probably be marketed under the "Day-Glo" trade name which is now used for daylight fluorescent dyed synthetics sold by Aberfoyle as sales agents for Switzer Brothers.

J. P. Holt, vice-president and treasurer of Aberfoyle, disclosed that the new yarn is now out of the laboratory stage and is moving from the pilot plant into limited production.

"At this point we cannot determine just when this new Day-Glo cotton will be ready for commercial production," Mr. Holt said.

double box press, where it is rebaled into standard, domestic bales. These bales, representing a theoretical mix of 50 in 1, are then returned to storage.

Dyed Raw Stock. Any of the bales to be dyed are moved from storage to the dye room where the bales are opened, the stock dyed as a batch, then rebaled in a press in the dye house. This dyed stock is then returned to the warehouse and treated just as if it were baled cotton from the gin. That is, it does not go to the opening room, but goes again to the mixing room, where it is again mixed in 50-bale batches, rebaled, and returned to storage. This mixing assures that the shades in the dyed raw stock are thoroughly blended. This colored stock and the premixed white are now ready for the opening room.

Opening Room. Twenty-four bales of white and six bales of dyed cotton can be opened at one time in the opening room, but only half this number of bales is run to the feeders at one time. If the twelve bales of white being mixed are all from the same original batch of 50 bales from the mixing room, this opening process merely represents a further blending of the same fibers, but if, at the other extreme, each of the twelve bales is from a different batch of 50, the mixing would be 600 in 1.

In other words, by selecting from the premixed bales in the warehouse, the theoretical mix from the opening room can be made as great as desired—far greater than could be had in even the largest opening room without premixing.

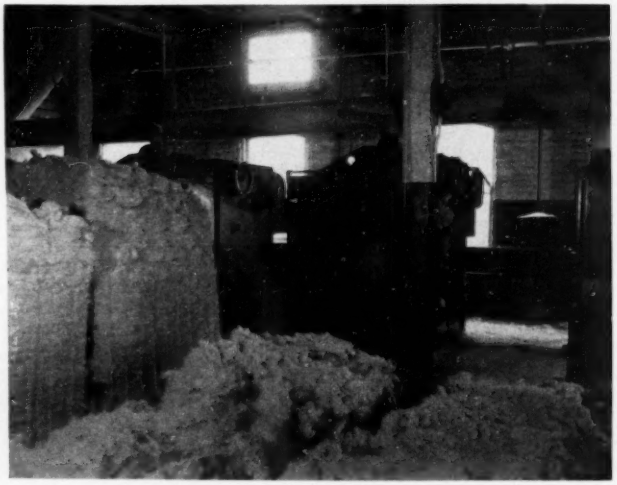
The mixing possibilities for colored stock with an arrangement such as this are practically unlimited. If each bale used in the mix after dyeing were from a separate first mix, and then if each of the three bales in the opening room were from yet a separate dye mix, the theoretical mix going to the picker room would be 50 x 50 x 3, or 7500 in 1.

In other words, the cotton in any pound of stock in the picker room would be a mixture of cotton from 7500 bales. Such a mix would be impractical as well as unnecessary, and it could be done only with enormous warehouse space; but the example shows that with the comparatively small space given to mixing and opening at this mill, any degree of mix can be attained.

Cost of Baling. There is some cost to rebaling the cotton after mixing, but it is a cost encountered at most mills which dye raw stock. At Fieldcrest, they figure that the labor cost of opening, mixing, and then rebaling in the mixing room runs about 80 cents per bale—not an unreasonable figure in view of results obtained.

Results. The mill management is very satisfied with the excellent blending being had, and there is no more question of tailing out on color runs to avoid streaked filling. It is also recognized that the premixing of the white is advantageous and pays off in better running conditions at all stages in manufacture. Several other mills in the area are now planning to go to this premixing and rebaling to achieve good blends.

FIVE F-7 CLEANING AND BLENDING FEEDERS and a vertical opener are utilized in the opening room.



From behind the "Iron Curtain" come

Questions on "Core Testing Wool"

THE TWO letters given here came as a surprise to the editors of TEXTILE INDUSTRIES. They were from Poland and were signed by a high ranking official in an educational institution in that country.

Although withholding the professor's name may be an undue precaution on our part, we will take no chance on a misinterpretation of his acts by the Soviets.

The professor referred to the article "Core Testing Wool" in our January 1950 issue, giving ample proof that progress in the field of commodity sampling has been made in countries "liberated" by the USSR.

Specific queries have been answered by the American authors who participated in the wool coring articles; this is a signal tribute to American brands of cooperativeness, coming at a time when cooperation is neither appreciated nor reciprocated by the East.

The professor must be credited for his courage in outwardly piercing the Iron Curtain. After corresponding with the "monopolistic capitalists" of the United States, we trust that the professor will still be around to benefit from these answers.—The Editors.

Letter to G. C. Le Compte. "From section of your article entitled 'Sorting and Blending' we understand that after the sample has been hand sorted, the main sort is separated from the tag sorts. Then, several subsamples from the main sort as well as the proportionate representations from the tag sorts are scoured and afterwards, blended again.

"Is it understood that this procedure aims at getting a possibly uniform blend of the main sort fibers with those of the out sorts? Is the proportion of the tags to the quantity of the main sort in any way recorded?

"We regret not to have found in your article, any indication as to the calculation of yield in your laboratory. The commercial practice is to calculate yield as a per cent proportion of the expected quantity of clean scoured wool to its weight in the grease. The scoured wool weight is calculated on the fixed conditioning basis whereas the weight greasy is the original weight of the bales as stated at the sales.

"However, a laboratory analysis should use the data referred to some more reliable and fixed basis; ie: the greasy weight should be calculated also on some condition of moisture. There is a procedure to determine yield as a proportion of bone dry weights."

Mr. Le Compte's Response. "The idea behind our sorting of the grease wool is that in this fashion the heterogeneous entire sample is reduced to two sorts which are much more uniform within themselves. Thus, the main sort of a sample might average 50% in clean content, with various portions of this main sort varying from 40% to 60%. The tag sort made at the same time according to our methods generally has a clean content of only about 10%.

"So, you see, the separating of the original sample into two sorts does a great deal to make the sorted portions far more uniform within themselves than was the original sample. The subsampling of these relatively uniform sorts derived from the sample is intended to provide the laboratory with portions which can be conveniently and rapidly processed.

"The sample proportion is taken from each of the sorts in making up a subsample which is to be put through the subsequent processing. The weighings and subsamplings of the sorts are all recorded on a convenient laboratory work sheet.

"Our yield determinations follow commercial practice in that yields are based upon the weight of the lot at sampling time. I note and agree with your remarks about the desirability of having laboratory analyses upon a more fixed basis, such as using bone dry weights for both the standard clean weight and the grease weight. Unfortunately, it is difficult to revise a widespread commercial practice, and so our clean content determinations remain upon the basis of scoured weights calculated to definite standards and grease weights as weighed at sampling time."

Letter to A. Johnston. "We are trying to get a more scientific approach to such an unhomogeneous commodity as wool . . . . and find core testing as meeting the purpose.

"The closing sentence of your article struck us with the suggestion that core testing may introduce new manufacturing theory, new machinery, etc. We are anxious to hear from you whether you think it is possible that yield may be a sole factor characterizing spinnability of a particular wool type tested.

"It does not seem that anybody in the wool trade has yet ventured the idea that wool quality be expressed in terms other than fineness, length, and soundness of fiber. We account for the fact how complicated it is for the practical man of the wool industry to assess all these factors by other means than visual inspection calling on its part for a long experience and profound knowledge."

Mr. Johnston's Response. "The core sample test for yield determination of grease wool is important from both the economic and technological standpoints. The economic significance of core test-

(*Continued on page* 199)

*Article 1**

EXCLUSIVE

By RAMON PARKS

Hiring and Training

IN ANY extended discussion of the responsibilities of the supervisor there is always the question as to where to start the discussion. Since the overseer or supervisor has a number of important duties, it is difficult to determine the most important of these responsibilities.

We might summarize his duties by saying that the supervisor is concerned with *machines, materials, methods,* and *men.* It is evident that without *men* or *help,* men and women, he can accomplish little. It logically follows that the selection and training of employees is one of his primary responsibilities.

The policy of the individual mill will determine the exact procedure in the selection of operatives for the various departments. If the mill has an employment office, the foreman probably is urged to specify the type individual, qualifications, and other necessary information to enable this office to make, as nearly as possible, the proper selection. Perhaps the supervisor does the hiring directly.

Regardless of the method, he usually has the final word on the individual hired. The reason that some overseers have a better class of employees in their departments than other overseers in the same plant is that they just do a better job of selecting the operatives that they employ.

The next step after actually hiring an employee is getting him "signed up." (A number of progressive mills require physical examinations before actual hiring.) Usually signing up takes place at the main office, and at many mills this is handled by a separate employment or personnel office. Because of the nature of some of the questions which must be answered, especially on insurance forms, this interview should be held as nearly private as possible. The person conducting the interview should be, if possible, a mature individual with a sympathetic understanding, making the new employee feel completely at ease.

Orientation. Following the formalities of hiring a new employee, there should be a period of briefing or orientation, including his introduction to his immediate supervisor, his instructor, and a few of his fellow operatives. Some large plants go in for this in a big way, especially where a large number of people are being hired at the same time. This feature would be handled by the personnel department and might consist of tours through the plant, classes in the his-

*THIS ARTICLE constitutes the first in an eleven-part series. Subjects to be covered are: hiring and training, employee relations, cooperation with other overseers and with management, work planning, delegating responsibility, machinery maintenance, cost control, quality control, waste control, good housekeeping, getting production, and self-improvement.

The author is a practical mill man with many years of experience. Inasmuch as this series is based on personal experience and observations, and because the author discusses many intimate subjects on which supervisors pride themselves as experts, a pen-name is used.

When the series is completed, it will serve as a personal check list for the supervisor's job.

Reprints. Each article will not be reprinted as it appears in the magazine. However, if demand for the entire series is large enough, then the discussions will be placed in booklet form. Let the editors know if you are interested.

tory of the company, its products, processes, policies, etc. (For the purpose of this article the smaller plant is considered, where the overseer is responsible for this orientation himself.)

When the new employee has finally been turned over to the foreman, it is up to the foreman to give the new man or woman the proper start by a little courteous treatment at this point. A briefing as to the part the department plays in processing the product of the mill would not be amiss.

Plans for the new employee's immediate future, a discussion of the pay scale, date and method of payment, a summary of a few outstanding departmental or shop rules, and of the major points in the safety program can well be given at this time. The new employee should be introduced to certain key personnel, including the assistant foreman and his immediate supervisor, the person who is to be responsible for his training, and perhaps a few others with whom he will be coming in contact.

Training by Instructor Operatives. Training of new employees in a department can best be accomplished by putting them with operatives who themselves have been trained as instructors. In the event organized training of these instructors is not feasible, the overseer should give these individuals special attention. He should be certain that they follow correct work practices, that they practice safety on the job, that they are good producers, that they have pride in the quality of their work, and that they have a good waste record.

After the new employee has been with the instructor for a few days, the overseer should check personally to see that the expected progress is being made. Any sign of bad work habits should be brought to the attention of the instructor—otherwise these practices will become fixed habits which will be difficult to break later on. Getting production, though important, should be secondary at this stage of the learning process to quality workmanship and a low waste outturn.

One point that should not be overlooked by the overseer: Be sure that the new man understands the reasons for doing the things that he has been taught to do and the reasons for doing them the *way* he has been instructed. This will furnish the foreman an opportunity to analyze the job himself and to be sure that the new man understands each step in the process and why each operation is to be performed in a certain manner. The wide awake overseer will have a job breakdown of each operation in his department and will eliminate any non-essentials. Never continue an unnecessary operation just for the sake of having something to keep a man busy.

Do Not Overtrain. Keep the new employee with the instructor only long enough for him to learn the fundamentals of the job and the correct method of performing each step—but no longer. Put him on some work by himself, a part of a job at first, and increase the work load as he can handle it until he is able to run a full job. Follow up very closely to be sure that he continues to use correct work habits. Correct him when necessary, but do not forget a pat on the back when he does a good job.

Upgrading Present Operatives. Another responsibility of the supervisor is to prepare his employees for promotions within his own department. We have heard much discussion in training conferences as to how much encouragement a foreman should give his men with respect to training courses which might prepare them for a better job, either in his own or in some other department. We are of the opinion that the employee should take the initiative. Perhaps this *initiative* might be the result of a notice on the bulletin board of a training class to be started, or he may have been approached by a salesman for a correspondence course. But if the employee approaches the overseer on the question of his opportunities for advancement in the event he takes certain training, the overseer should use considerable judgment and tact in discussing the matter with him.

If the operative has some habits or traits which might hinder his advancement the overseer should take this opportunity to point these out to him. If the employee's educational background is such that the proposed training might be too difficult, the supervisor might suggest certain preparatory training first. He should go slow in making any definite promises which might prove very embarrassing when the time comes for actual promotion. The question of seniority may have to be considered (in mills which have a union contract seniority *must* be taken into account when jobs are to be filled). The overseer should, of course, encourage his employees to avail themselves of additional training, but he should be careful not to allow himself to get out on a limb.

Transfers from Other Departments. Sometimes it is necessary to secure employees from some other department. Perhaps the other department has had to lay off certain operatives because of a change in process or method and they are to be transferred to another department rather than to be discharged. Or there may be different reasons. Though these transferred operatives may have been employed in the plant for several years, the supervisor should not take for granted that they will immediately fit into his department. He should give them the same courteous treatment that he would give any other new employee. He should brief them on the departmental "shop" rules, safety program, etc. Perhaps they may have acquired some bad work habits which he should endeavor to correct while they are still new in his department.

Transferred employees may be the source of some good suggestions if given the right encouragement by the overseer. Perhaps they have worked with some of the products of his department on their old jobs,

Ideal Textile Mill Power System*

The ideal power system would be one which supplies absolute reliability, flexibility, proper voltage, and maximum safety.

In planning for reliability, we consider the value of production and employee earnings the two most important factors.

By flexibility, I think of a system that can be adapted to suit load conditions and changes as they occur, with a minimum of expense and effort, while maintaining maximum production.

The maintenance of rated voltage at the equipment is, of course, a very desirable goal. We find that the maintenance of a high system power factor, besides usually saving us money on our power bill, improves the voltage regulation of all components of the system.

Another benefit is to operate all main feeders at the highest secondary voltage, in our case 600 volts, and use dry type transformers "on the spot" for lower voltage requirements.

In speaking of a safe system, I refer to safety to personnel, equipment, and property.

*Summary of paper entitled "Design of a Textile Mill Power System" by R. B. Wickham, superintendent, service division, West Point Mfg. Co., Langdale, Ala., presented at the 1951 conference on Electrical Application for the Textile Industry held in Atlanta, Ga., and conducted jointly by American Institute of Electrical Engineers, A. French Textile School, and School of Electrical Engineering, Georgia Institute of Technology.

or maybe they worked in the preceding department. Their previous experience might enable them to suggest some short cut in the new department, some way to save waste or improve the quality.

Training of Assistants. One of the greatest responsibilities of the supervisor with respect to training concerns the training of his own assistants, both present and future. No foreman should attempt to run the whole show himself. One reason is that in this way he will fail to get the most from his assistants. It is just human nature for a man not to do his best when he feels that someone else will get all the credit.

Another reason is that it is almost impossible for a foreman to be on the job 100 per cent of the time. In fact a *good* overseer will want to take off some time occasionally, perhaps to attend a meeting, to visit some other mill, or even to go fishing for a day. And a *good* overseer will want the department to run in the same efficient manner when he is away from the job as when he is present.

Technical training of the assistant overseers or secondhands is important; but of greater importance is training in job relations, job instruction, cost and waste control, production planning, and other features of industrial management. It is strictly up to the supervisor to see that his assistants are given an opportunity to take this training either in organized classes or by home study. He will see that they read any available books on these subjects and that they are subscribers to the best trade papers . . . and that they do not leave them lying around with the wrappers still on them!

The overseer will keep his men posted on all changes in mill policies and will not wait for them to learn about these things from outside sources. He will consult with them on all management problems confronting the department and will give them opportunities to make suggestions for their solution. He will see that they study the cost, waste, and production reports. The quality of the product and the safety program should receive constant attention in the discussions of the overseer and his assistants.

The selection of the individual who is to be the principal understudy of the overseer should receive very careful attention. Certainly the mill management should be consulted because management must decide who is to be the head of the department in the event of a vacancy.

Many a good section man has been ruined by making a secondhand of him. There was a time when technical knowledge and machine fixing seemed to be the principal prequisites of a secondhand. The section man who kept his job in top-notch condition was thus selected as secondhand. But mill management has come to realize that there are other requirements, chief of which are the ability to get along with people and to be able to direct their efforts in producing a quality product, in a safe manner, at the lowest cost, with a minimum of waste, and with the fewest number of grievances.

Although the question of *selecting* an understudy might be further expanded, our immediate concern is training the supervisor's assistants. An overseer cannot force an assistant to attend a training class . . . unless held on company time . . . to read a book, or to take a home study course, but he can certainly encourage him to do these things.

Cooperating with the Mill's Training Program. The attitude of the foreman toward the training program of the plant will determine to a large degree the attitude of his own employees and assistants toward training. The progressive overseer will give the training program all possible cooperation and assistance.

He will, if possible, serve as an instructor in at least one class. He will encourage his assistants or key employees to serve in a similar capacity, if needed. He will display prominently the notices or posters relating to training. He will cooperate with the training director by furnishing job breakdowns, work schedules, or other information needed to prepare courses of study.

We do not claim that training will cure all of the ills in a department, but the wide awake, progressive overseer will recognize training as a tool, which when properly used will make his work easier and more effective.

(To be continued)

Motor Maintenance

Ball Bearings for Old Motors

Replacement ball bearings reduce friction losses below that of new sleeve bearings and greatly extend the life of old electric motors.

EXCLUSIVE

By LANIER ALLISON

Plant Engineer

THERE have been a number of instances recently where old motors have given trouble because of worn and inadequate bearings. Both the shafts and the bearings are frequently in such bad shape that it is necessary to discard the motors and replace them with new ones.

It is possible to install ball bearings on such motors and greatly extend their life, at the same time reducing friction losses below that of a new sleeve bearing motor. A number of companies make special ball bearing cartridges suited to the job.

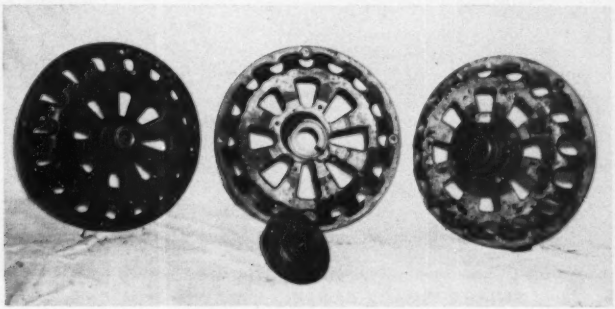
When the bearing cartridges are purchased, they should be for a shaft 1/16 in. smaller in diameter than the present shaft in the motor. Then, the shaft is turned down 1/16 in. to fit the bearing. This is done to assure a good fit, and a new bearing will not properly fit an old worn shaft. Of course, if the shaft is badly worn, it will not be necessary to take a full 1/16 in. off, but a good fit between the shaft and the inner race is necessary.

One of the end shields of the motor is then chucked in a lathe and trued with the machined surface that fits against the stator. The whole extension containing the oil reservoir is turned off. This makes a seat for the flange of the ball bearing cartridge. The photograph shows this clearly. The first end shield on the left is just as it was removed from the old motor. The shield in the center has had the oil reservoir turned off. In front of it is shown a ball bearing cartridge, and on the right is the new assembly.

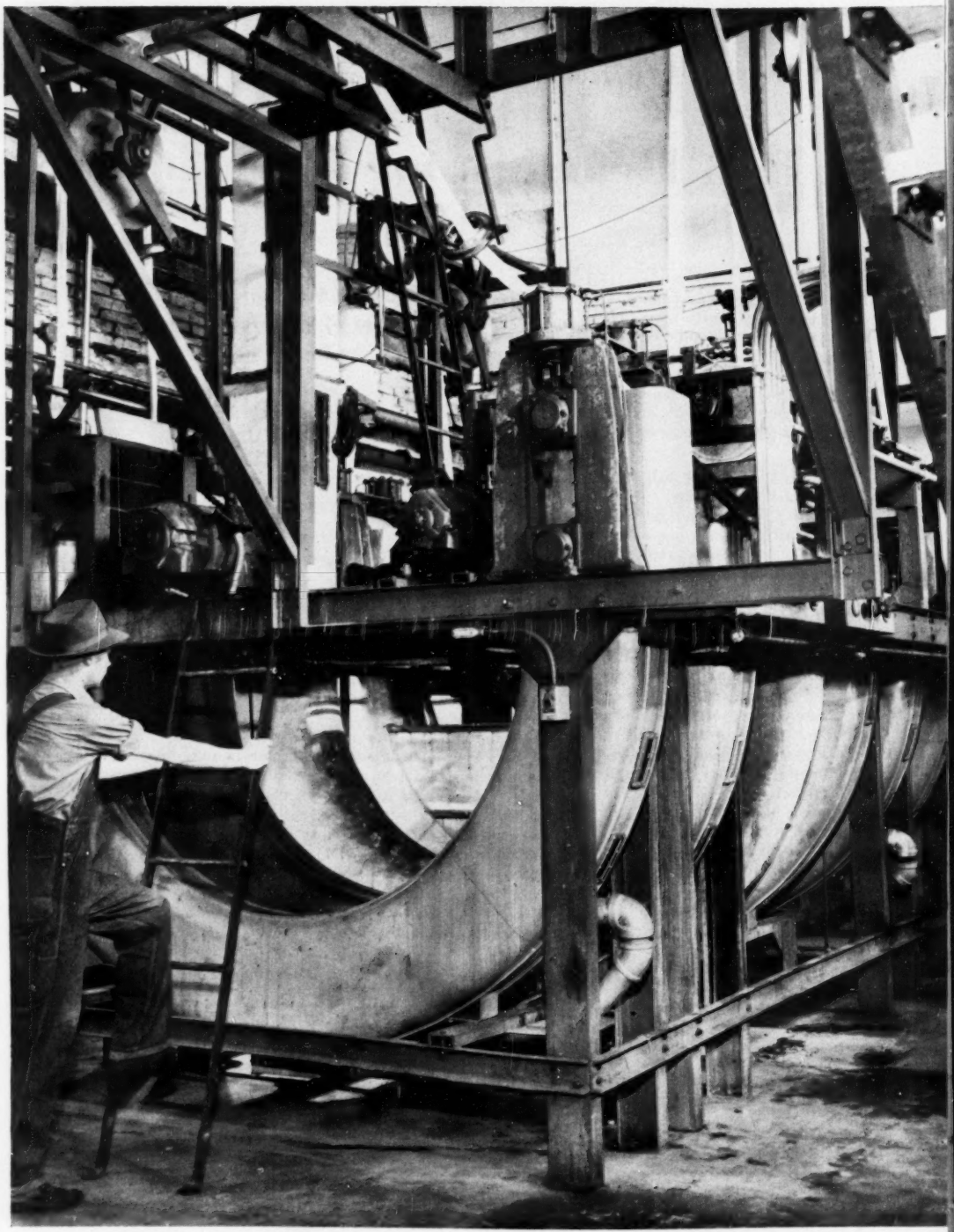
After the oil reservoir has been turned off, the shield is bored to the diameter of the boss on the ball bearing cartridge. The cartridge is then bolted to the shield.

After the bearing cartridges have been fitted to both end shields the motor is reassembled. However, it is wise to start the motor several times before locking the inner races to the shaft. Starting the motor will permit the rotor to seek its magnetic center, and only after it has settled in this position should the races be locked.

A great many motors have been converted in this manner, and they have all given excellent service. After the first few jobs, it will be found that it is a quick and easy affair.



END SHIELD at left is shown as it was removed from the old motor. Shield in center has had the oil reservoir turned off. In front of it is shown a ball bearing carriage, and on the right is the new assembly.



SWIFT'S BLEACH RANGE occupies only 30 sq ft of floor space; bleaches 25 to 35 yards per minute.

Swift Manufacturing Company's

Versatile Junior Bleach Range

Staff Prepared

NOT ONLY is unit used for bleaching. It also serves as a means for impregnating cloth in resin finishing and in applying lattices. Other uses: desizing and washing. Experiments are under way to determine potential use for dyeing.

EXCLUSIVE

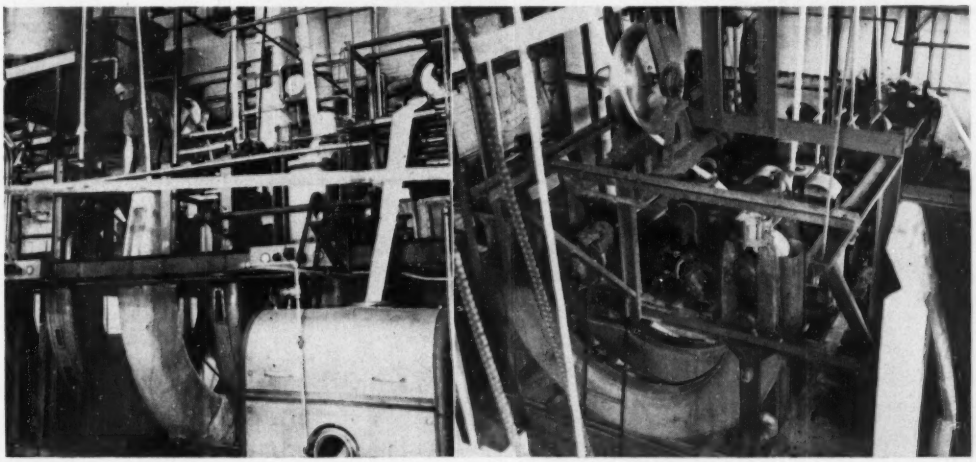
PIECE GOODS are now bleached in a Butterworth Junior Bleach Range which was tailored to meet limited space requirements at Swift Manufacturing Co., Columbus, Ga. The unit was installed during the first half of 1950 in order to supply the demand for bleached products. Before the new range was installed, all piece goods made at Swift were bleached by other finishing plants. Many customers called for bleached goods, so the management at this mill considered every way possible to supply the demand.

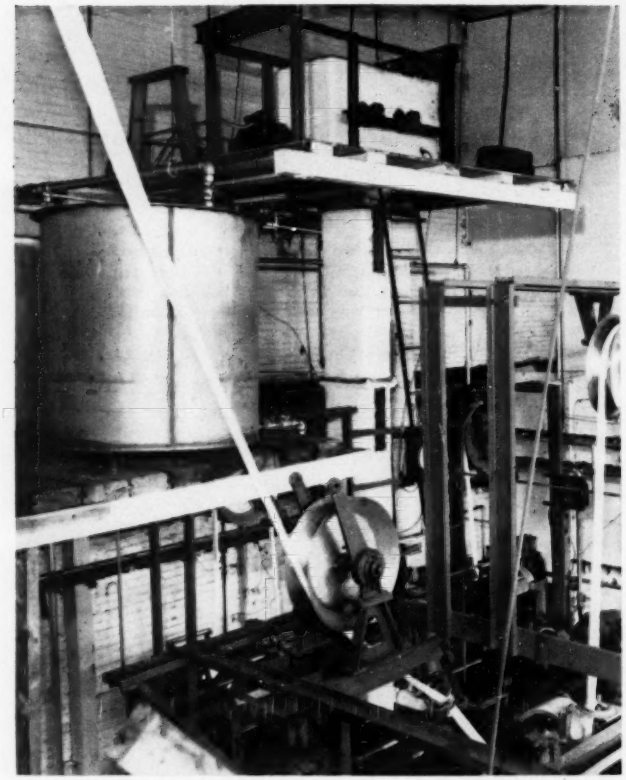
Limitations. Due to the lack of floor space and limited demand for bleached goods from this mill, Butterworth engineers were called in to work out details for a suitable bleach range to fill the requirements and yet fit into the limited space available for such a machine. The small bleach unit now in operation is the product of the planning and efforts of the Butterworth engineers for a special "tailor-made" installation.

The equipment occupies a floor area approximately 30 feet square, and it requires a ceiling height of approximately 35 feet. The distance from first box to last box is only 16 feet. A panelboard was installed with controls to each electric motor in the drive train which utilizes eight electric motors. There are four 3-hp motors, three 2-hp motors, and a single 1-hp motor. An additional motor operates the folder; all motors are d-c.

Operation. To start a run on the bleach range, it is necessary to operate drive motor No. 1 until about 100 yards of cloth are in the first box. While drive No. 1 continues to operate, drive No. 2 is started and deposits about 100 yards of cloth in the second box. This procedure is followed until the J-box (fourth box in line) is reached. Approximately 250 yards of cloth are deposited in the J-box before the next drive motor is started; then each of the remaining drives are started (after the boxes are loaded) until the entire range is in operation. About one hour is required to get the range into production, and the amount of cloth required to load each box depends upon the weight of the goods. Ap-

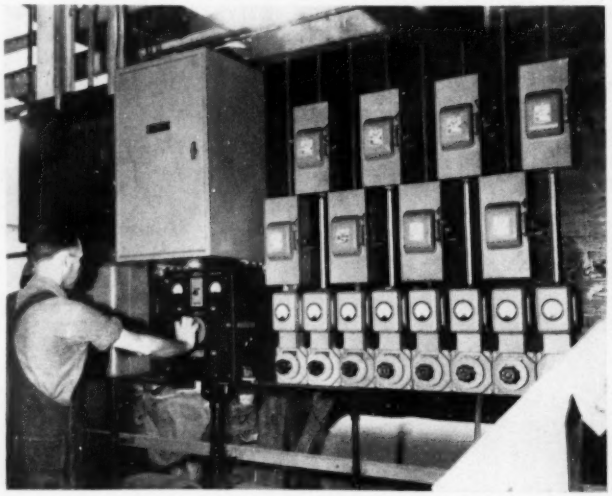
ENTERING END of range (left), showing J-box which is covered with white insulation. The two kettles mounted on a pedestal, upper left, contain chemicals used in processing. Right, four 3-hp motors, three 2-hp motors, and a single 1-hp motor are utilized to operate the range; all motors in this application are d-c.





J-BOX is operated at higher temperature than other boxes. A steam heated coil is located at entering end of J-box to raise the temperature at that point for conditioning and accelerating action of chemicals. Insulation maintains the higher temperature provided for this box.

CONTROL PANEL permits separate operation of individual motors in the drive train of the bleach range. Individual motor controls are a necessity in starting a run on the range.



proximately 25 to 35 ypm is the rate of production for regular bleach goods.

Box Nos. 1 and 2 are wash boxes (wet out); detergent is usually put into these boxes. Box No. 3 serves as a saturator where bleaching agent or caustic is applied. Box No. 4 is J-box where conditioning takes place at 190 to 212 F. Boxes 1, 2, and 3 are kept at 150 to 190 F, and it is necessary to maintain uniform temperature as closely as possible. The J-box is operated at higher temperature than the other boxes; the higher temperature is needed for conditioning and accelerating action of chemicals. A steam heated coil is located at entering end of J-box to raise the temperature at that point, and the J-box is insulated to maintain the higher temperature provided for this box.

Cloth from the J-box travels through boxes 5 and 6 which utilize plain warm water to wash out chemicals. After leaving box No. 6, the goods pass over a perch near the ceiling, and from this point a pair of guides direct the cloth to a folder which plaits the goods down in wet condition on a truck.

Plans are being made to deliver the cloth directly to a loop dryer without plaiting first, but this arrangement has not been completed yet.

Results. The small range does a good job of bleaching on all goods processed through it, according to officials at Swift. The machine is used primarily to bleach osnaburgs and light weight fabrics used by the millinery trade. Other fabrics may be processed on this equipment; however Swift has not yet exploited all of the possibilities.

Experiments already have been conducted to determine the potential use of the machine for dyeing; further work must be done before this can be considered practical.

However, the range is being used for impregnation of cloth in resin finishing and in applying lattices. Good penetration is secured when the compounds are applied in the saturator; when this is done, the first two boxes used for wetting out are by-passed. Other uses are for desizing and washing.

A Mill Superintendent tells

How to Reduce Yarn Defects

Gouts in yarn were reduced 50%. Several measures utilized to remedy other defects.

EXCLUSIVE

OBTAINING good quality yarn is not merely a question of finding a yarn cleaning device to rid the yarn of defects but one of eliminating the cause of those defects. It is our opinion that most of the defects that finally show up as slubs, gouts, or lint buttons are products of the spinning room, and we also think that blowing off with an air hose causes more defects than all other causes combined.

In our mill, defects have been reduced more than 50% by eliminating all blowing off of the overhead, base rails, ring rails, idler pulleys, drive pulleys, motors, and overhead cleaners.

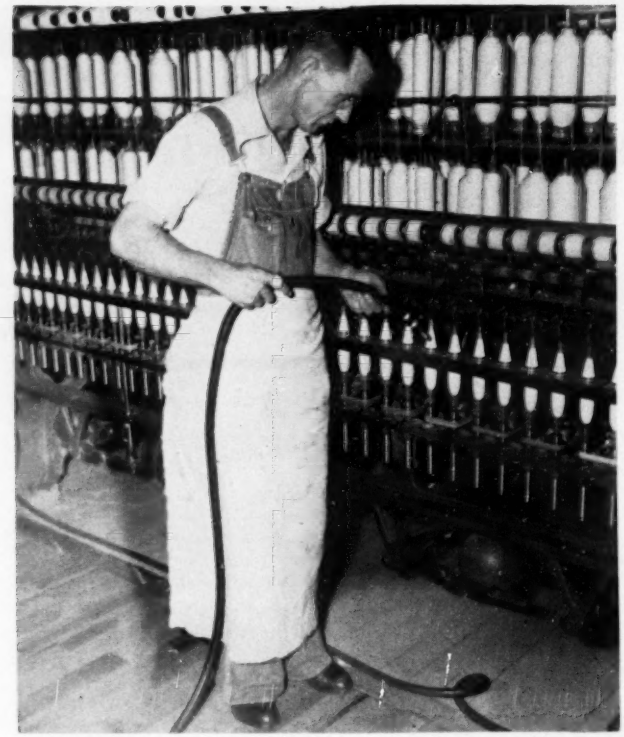
We did not give up compressed air in one sudden decision. It came to us gradually. There was a time when we used as much compressed air in the spinning room as any other mill, and even after we installed overhead cleaners, we continued to blow down every 12 hours. But we tried a few experiments and learned that less compressed air means fewer defects.

We mounted fans on our overhead cleaners to direct an air stream upward to keep the ceiling clean. We stopped blowing down overhead, and then we stopped blowing the frames, the spindle rails, and the motors.

THE BEST METHOD of cleaning around the spindles is to use a small, round bristle brush about 1½" in diameter, mounted on a metal handle suitable for easy manipulation by the operator.

Brush, Picker, and Mop. Naturally, we could not stop using compressed air for cleaning without substituting something else. In our opinion, the best method of cleaning around the spindles is to use a small, round bristle brush about 1½" in diameter, mounted on a metal handle. This does a good job of cleaning without creating a lot of fly. Our spinning frame operators clean a third of the frames in their section every shift, so that in three shifts, every spindle is cleaned. At first the operators felt that this brushing took longer than using an air nozzle, but time studies were made, and it was demonstrated that this operation actually took less time. All of the operators now favor the brush over the hose.

The idler pulleys are cleaned with a revolving picker with an extra long shaft to reach down to



DEFECTS have been reduced more than 50 per cent by eliminating all blowing off of the overhead, base rails, ring rails, idler pulleys, drive pulleys, motors, and overhead cleaners.

the pulley with ease. Motors are cleaned with a hand mop.

In the process of changing from compressed air, the employees in the spinning room have become particularly impressed with the harm caused by loose fly. Compressed air has become practically taboo. Any time parts are cleaned with air, they are taken into another room, not by orders from management, but through the employee's own desire to avoid fly.

The other day an employee was noted using a revolving picker to clean off some cloth which was being used to cover a few boxes of bobbins stored in the corner of the spinning room. The picker had a large ball of lint on it and the employee was doing a good, fast job of picking lint off the cover cloth. This was a new one for us. It had still been the practice to use compressed air to do this incidental type of cleaning. When asked why he was using the picker instead of an air hose, he pointed out that while it might take a little longer to do the job, he was not stirring up any fly.

"If we cut down fly by hand cleaning the frames, why blow it into them when cleaning the rest of the room?" he asked.

He had a good point there.

It is true that most of these cleaning methods are slower than cleaning with compressed air, but if it is necessary to keep out defects, it is profitable to use the slower method.

There is one spot in the spinning room where we still have to use compressed air. Our humidifiers are so directed that there is always an area in front of and above them on the ceiling where a lot of lint collects. We have to use a long compressed air nozzle to get this down. However, we are now in the process of removing these humidifiers, and we are replacing them with a modern air conditioning system. When this is complete, we see no reason for using compressed air in the spinning area.

Other Spinning Defects. Although we have so far emphasized the defects caused by compressed air, certainly there are other causes in sufficient number to warrant serious efforts to avoid them. Defects are caused by spinners cleaning back guides with a finger brush which is too wide or is used in a careless manner. Other defects are caused by brushing rails too vigorously, thereby causing fly which settles in the yarn.

We have also found that constant instruction is necessary to keep spinners piecing-up ends in such a manner to avoid defects. The common defect in piecing up ends is known as "cork screw" piecing. Defects of this kind break in spooling, warping, and weaving. Also, defects are caused by the way spinners creel the roving. These vary from major to minor, and we have found it necessary to constantly remind spinners not to leave long tails in creeling and allow pieces of roving to fall into yarn which has passed through the rolls.

We have found we get much better results by showing spinners the defects caught in spoolers than we do by just telling them about them. We take out the yarn defects caught in the snickplates on spoolers and display them on a board. This board has a piece of adhesive at the top and another at the bottom. The yarn is attached at top and bottom, and this method of mounting shows up the defects very clearly.

Pre-Spinning Defects. All of the yarn defects so far mentioned have been charged to the spinning department. This is hardly fair, for many of the defects caused by clearer waste being spun into the yarn come from as far back as the drawing frames. It is not difficult, however, to remove the cause of clearer waste defects. We have found that a highly napped clearer cloth on drawing and roving frames does well with little upkeep. Frequency of cleaning this

cloth depends on the type of stock being processed, but cleaning should always be done with the machine stopped to keep this waste from getting into the stock.

After clearer cloth has been used for a long time, the nap fills with small particles of lint, and the cloth loses its ability to hold the waste. When this happens, it is best to change the cloth, but it can be burnished with a soft wire brush or cleaned with compressed air.

So far as we can tell, the conventional flat top clearers are best for drawing and roving frames. Other types have been used, but our experience leads us to believe that these have more drawbacks than advantages. On the other hand, we have had excellent success with revolving type clearers on spinning frames.

Eyebrowing at the rolls also causes spun-in or loose lint buttons. We believe that this is caused by the cots, and it is necessary to find the correct cot to use on the job being done. Very often the reason for one cot eyebrowing while its neighbor does not lies in the difference in diameters of the two cots. When a flat top clearer is used, the larger of the two cots will carry most of the weight of the clearer and will pack and hold the accumulated clearer waste while the smaller of the two will not carry enough of the weight, and it will fail to pack into the top clearer. Consequently, the clearer waste will accumulate in front of the clearer and form an eyebrow.

Surely, everyone knows that all the synthetic cots on any frame should be buffed at the same time and to the exact same diameter. Any roll replaced in such a line should be sized before being installed.

Snickplate Settings. A discussion of yarn defects is hardly complete without some mention of snickplate settings. We have found it practical to use a slightly closer snickplate setting than Barber-Colman recommends on the breaker type plates. However, we do not recommend this closer setting on the older type plates. This old type plate has a tendency to shave the yarn and produce buttons, thereby resulting in a yarn of poor weaving quality. Poor yarn also results from too wide an opening.

Proper snickplate settings for any yarn in any mill can be determined only by a close observation of the yarn at the spoolers, the slashers, and the looms.

Quality Important. Perhaps, from the point of view of many mills, we pay too much attention to the elimination of yarn defects. It is true, we agree, that we would pay a great deal less attention to appearance defects if we were weaving tire cord or burlap. In fact, many of the defects we eliminate would go through the weaving process on a low sley and pick goods. However, we manufacture yarns ranging from 30s to 40s which are used to weave piques and broadcloths of well over 100 sley. The elimination of yarn defects in this kind of work is a serious matter.

We are pleased with the accomplishment so far, particularly the results attained by eliminating compressed air blowing from the spinning room. We are confident, of course, that we have much more to learn in the future.

Textile Quality Control Association Formed

Staff Report

A new organization known as the Textile Quality Control Association was formed at a meeting held in the Textile Auditorium of N. C. State College, Raleigh, N. C., on April 12. This organizational meeting was a follow-up of a preliminary meeting held in Gastonia, N. C., last September.

The name of the group was officially adopted, and Clyde Moss of Firestone Textiles, Gastonia, N. C., was elected president. Other officers elected by the group were: F. H. Martin, Springs Cotton Mills, Lancaster, S. C., vice-president; W. A. (Luke) Thomason, McGraw-Hill Publishing Co., Charlotte, N. C., secretary; and George Archer, Uster Corp., Charlotte, N. C., treasurer.

It was decided that anyone interested in quality control in the textile industry might become a member of the organization but that the principal interest of the group would be geographically limited to Virginia, North and South Carolina, and Georgia. Eighty-five persons attended the meeting and all signed-up to become charter members.

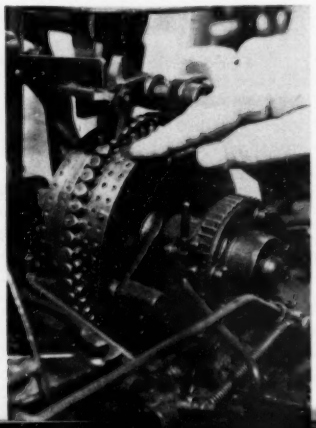
Critical

IN MAKING common types of patterns on the Banner Wrap-Reverse seamless knitting machine, several critical adjustments require more careful attention than others, according to observations at Holeproof Hosiery Co., Marietta, Ga. All parts of the machine should be properly adjusted and maintained for satisfactory operation, but the universal wrap head, the wrap head drum, and yarn tensions must be precisely adjusted to obtain good work.

Wrap Head Drum. The universal wrap head is controlled by the wrap head drum which has 48 adjustable screws, and in making the usual types of argyle patterns, these screws are set at .003 to .006-inch integrals, depending upon the yarn, gauge, and pattern being run. Whether the settings are high or low depends upon whether the pattern is being increased in width or decreased in width at any given point. It is essential to keep the screws tight (by securing the lock nut on each screw) and at the proper adjustment.

At the beginning of each diamond in the pattern, the screws are at the lowest point, and it is most important to have the screws

SCREWS on the wrap head drum should be set at .003 to .006-inch integrals, depending upon the yarn, gauge, and pattern being run. It is essential to keep the screws locked securely in position.



ALL PARTS of the machine should be properly adjusted, but the universal wrap head, wrap head drum, and yarn tensions must be precisely adjusted to obtain good work. The wrap yarn fingers also require special attention.

First quality production easily maintained by checking

Settings on Banner Wrap Reverse

Staff Prepared

EXCLUSIVE

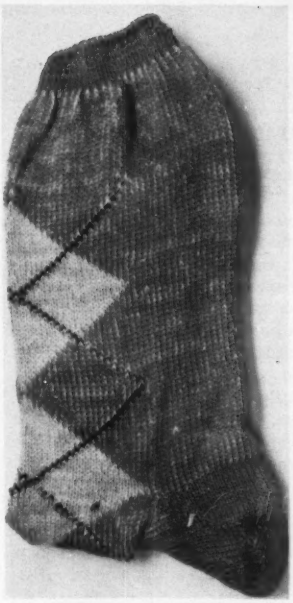
on the wrap head drum set so that the increase in height from screw to screw is uniform. After the widest point in the pattern is passed, the screws should be set for uniform step-down (the decline from screw to screw should be uniform) and to the same degree the increase was made to the widest point in the pattern.

To obtain good settings for quality work, it is desirable to adjust the machine and run some test fabric immediately after the pattern is put on the machine to see if the screws are adjusted properly. All pattern drums should be idled while testing, to prevent the machine from knitting a complete cycle and going into the heel before the necessary adjustments are completed. After each screw is adjusted on the wrap head drum, several courses should be knitted to determine whether the wrap fingers are in proper position in relation to the needles.

Universal Wrap Head. If the wrap fingers are not adjusted to provide proper clearance, the wrap yarn will not be fed to the proper needles, thereby ruining the work. Enough clearance must be allowed to permit the fingers to pass one another without touching. The fingers are equipped with provisions for adjustment, and they should be set by sight and feel. The wrap fingers may slip or become bent or fouled if the set screws are not tightened securely after the adjustment is made.

Sinker-Jack Drum Settings. If plating suddenly begins to look bad in the sole of the sock, it may be that the sinker-jack drum is not being withdrawn sufficiently to clear the short butt jacks. If the sinker-jack pattern drum is not set to push the slides deep enough, the leg may be knitted plain on the short sinkers. If the sinker-jack drum is set too deep, it will score the sinker-jack bed.

Care should be exercised in checking all wrap yarn take-up tensions to see that they have a uniform tension and take-up on all yarn deliveries. This step is necessary to insure proper take-up of the yarn in plating.

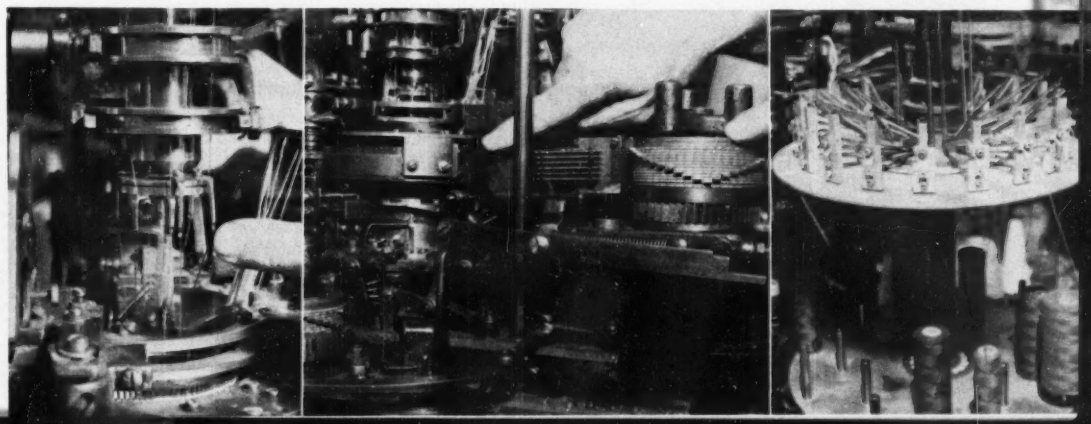


DARK SPOT in lower diamond was caused by an improperly adjusted wrap head. Dark yarn wrapped around wrong needle, causing dark color to knit at wrong place. The sinker-jack drum, in this instance, was not set to push the slides deep enough; therefore the leg was knitted plain on the short sinkers.

WRAP FINGERS must be adjusted to provide proper clearance; otherwise the wrap yarns will not be fed to the proper needles, thereby ruining the work.

SINKER-JACK pattern drum must be set to push the slides deep enough or the leg may be knitted plain on the short sinkers; if the sinker-jack drum is set too deep, it will score the sinker-jack bed.

WRAP YARN TAKE-UP tensions should be checked carefully for uniformity. This measure is necessary to insure proper take-up of the yarn in plating.



Shuttles Tell a Story

BY WATCHING the shuttles, many faults of the looms, loom fixers, and weavers can be found and corrected. This procedure will lengthen the life of the shuttles, keep the looms running longer between stops, and produce more and better cloth with less labor and expense.

EXCLUSIVE

By WILMER WESTBROOK

AN EXPERT woodsman can tell the size, age, and sex of almost any species of animal just by examining a few of its tracks. Very often he can also ascertain when the animal passed that way, what it was doing, how fast it was traveling, and other pertinent information.

It is a far cry from the wilds to the weave room, but some of the woodsman's ability to read "sign" can be applied to diagnosing loom troubles. Many malfunctions of a loom will leave marks on the shuttle in the form of cracks, scars, and worn places. This is especially true of single shuttle looms where the shuttles do not have to be matched and dressed as often as in box looms.

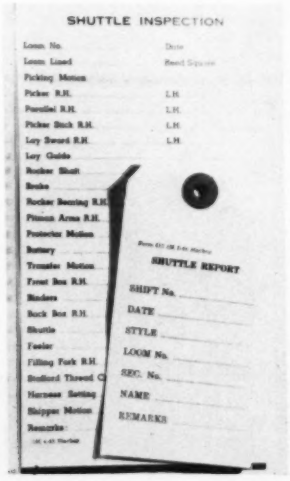
The accompanying illustration of the back side of a shuttle shows that the back boxes and reed were badly out of line. The marks above the spring on inside of shuttle were made by the steel rings of the quill. These marks show that the lay did not come far enough forward, and the bobbin was "rolled in" on the front when it was transferred. The strip of wool used to control the tension of the filling is missing, and this seems to denote a careless weaver and a lazy fixer. A shuttle will not only show some of the things wrong with the loom, but will also tell something of the attitudes and abilities of those responsible for its operation.

On the front of a shuttle (shown in accompanying photo), a worn place in the feeler slot shows where the filling feeler was set too low and probably caused the loom to "knock out" bobbins or pieces. The worn place between the feeler slot and spring bolt was caused by a worn front box covering or by the boxes being set too close at the back and pinching the shuttle when it boxed. This also shows an oversight on the part of the fixer, for although he may have corrected the cause of this abnormal wear, he failed to cut a suitable filling groove in the side of the shuttle.

The cut places in the shuttle at the end of the thread cutter slot show that the shuttle was not boxing properly in the right box and the end of the thread cutter was striking the shuttle. Just above this slot a series of small grooves can be seen. They were caused by warp ends and improperly timed harnesses not holding the shed open for the complete passage of the shuttle. The ring marks above the spring show that the lay was coming too far forward on this loom, and the bobbins were "rolled in" on the back while being transferred.

Troubleshooting. There are many other things that will leave a mark on the shuttle. A worn picker, or insufficient packing between the picker stick and the back of the right lay end, will cause a worn or shiny place on the spring cover where the butt of the quill strikes when pushed downward by the transferrer. Worn or splintered places on the bottom of the shuttle are caused by lay ends and shuttle race being out of line, by a picker being too high or too low or not parallel, or by the harnesses not being set properly. A washboard effect on the back of a shuttle is usually caused by a combination of rough reed and vibration. This condition may be caused or aggravated by the reed and back boxes being out of line, and is most noticeable when looms are being run at excessive speeds.

GOOD SHUTTLE MAINTENANCE includes an adequate record system which provides accurate information when it is needed. The two sample forms shown here are used successfully in a mill which recognizes the importance of shuttle maintenance and keeping records.


SHUTTLE INSPECTION

Loom No. Date

Loom Used Reed Space

Picking Motion

Picker R.H. L.H.

Pantlini R.H. L.H.

Picker Stick R.H. L.H.

Lay Sword R.H. L.H.

Lay Guide

Rocker Shaft

Brake

Rocker Bearing R.H.

Pinion Arms R.H.

Protector Motion

Battery

Treadle Motion

Front Box R.H.

Binders

Back Box R.H.

Shuttle

Feeler

Filling Fork R.H.

Stuffed Thread G

Harness Setting

Shipper Motion

Remarks

SHUTTLE REPORT

SHIFT No.

DATE

STYLE

LOOM No.

SEC. No.

NAME

REMARKS

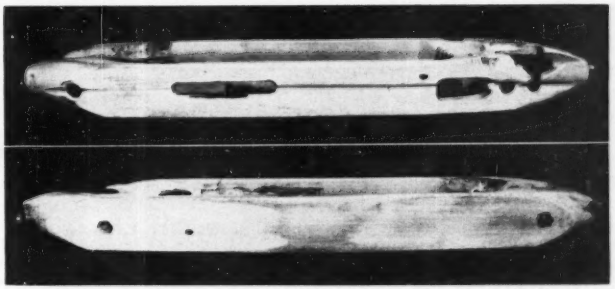
Bad start-ups often cause the shuttle to bounce from the box and strike the temple or filling fork. A dent in the side, or deep scratches across the top of the shuttle, will show when this is being done. In this instance, the weaver is plainly at fault, but the stop motions, brake, or clutch may be causing faulty stops and should be checked.

Loose shuttle eyes and loose or worn springs cast a bad reflection on both the weaver and fixer. The loss of both quantity and quality in weaving far outweighs the few minutes time taken to tighten or replace them, and the loom should not be allowed to run with such eyes and springs in the shuttle.

When putting in a new shuttle, a close examination of the old one will usually show the parts of the loom that need fixing. Often an examination gives a clue as to the cause of the old shuttle having to be replaced. Most of the marks and scars are too deep to be sanded over and completely erased. Frequently a loom has been fixed, but the shuttle will show the marks of the former maladjustment. It is easier to check a given part than to take for granted that a maladjustment has been corrected and then have the new shuttle show the same markings or have to be replaced like the preceding one.

It is a good plan to examine a new shuttle several times daily for the first week and look for any tell-tale markings. In this manner, bad settings, timing, and other faults can be detected and corrected before much damage has been done.

Records Important. At one mill, the importance of shuttle maintenance and replacement is emphasized by a record system, and each loom is given a complete inspection when a new shuttle is installed. When a shuttle is requisitioned, the fixer must turn in to the supply clerk a shuttle tag which bears his name, section number, loom number, style of cloth being woven on the loom, the date, shift, and any other pertinent information. These tags are sent to the weave department office, and the information is placed on a permanent record. The looms are all numbered and recorded in rotation, and the complete shuttle history of any loom in the mill is readily available.



FEELER SLOT shows a worn place (top photo) on front of shuttle where the filling feeler was set too low. Worn place between feeler slot and spring bolt was caused by a worn front box covering or by boxes being set too close at back and pinching the shuttle when it boxed. Although the fixer may have corrected the cause of this abnormal wear, he failed to cut a suitable filling groove in the side of the shuttle. Bottom photo (back side of shuttle) shows that the back boxes and reed were badly out of line. The marks above the spring on inside of shuttle were made by the steel rings of the quill. These marks show that the lay did not come far enough forward, and the bobbin was "rolled in" on the front when it was transferred. Wool strip for controlling tension on filling is missing.

The records are a valuable aid in finding and fixing any looms that use an excessive number of shuttles, in checking up on poor loom fixing, and to prevent operatives from "swapping" shuttles from loom to loom or section to section. The records provide information and data regarding the average life of a shuttle on a given style of goods or on different models of looms.

One interesting fact revealed by the records is that shuttle replacement is directly proportional to the number of transfers per hour on the loom. A loom requiring thirty transfers per hour will use three shuttles (average) to every one needed in a loom making only ten transfers per hour. Very few shuttles actually wear out; their usefulness is usually cut short by breakage. A majority of accidents that ruin shuttles take place during the transfer; therefore the chances of ruining a shuttle increase with the frequency of filling transfers.

Shuttle Life. Some X Model looms weaving heavy goods (coarse filling) at a speed of 192 ppm were in need of shuttle replacements after 600 hours of service. When the speed of a few of these looms was reduced one-tenth, the shuttle life was doubled. The test speed has not been in effect long enough on a sufficient number of looms to be conclusive, but results seem to prove the theory that the looms were being run too fast for the heavy goods being woven.

When a loom fixer puts a new shuttle in a loom, he takes a shuttle inspection slip and checks each part on the slip as he inspects the part on the loom. Looms in need of special service are marked as such on the slip, and the second hand gives the slip to the fixer who takes care of the job. The second hand inspects the loom fixer's work and orders any additional adjustments or repairs which may be necessary.

Each section is divided into three equal parts, and the fixer on each shift is responsible for keeping a third of the shuttles in good condition. He is required to inspect the shuttles daily, keep them sanded and smooth, eyes and springs tight, good filling grooves in side and bottom, good bristles in the shuttles, strips of fur and wool in those requiring it, and he must also see that the pickers and box leathers are in good condition.

By watching the shuttles, many faults of the looms, loom fixers, and weavers can be found and corrected.

Figure Your Own

EXCLUSIVE

IN A PRINT cloth and sheeting mill running many different constructions, it frequently becomes necessary to calculate the required yarn number for filling to make a desired weight of cloth. Usually the warp yarn numbers are known or selected, so it is in the calculation of the filling that the cloth weight is determined—an important item from both a merchandising and a cost standpoint.

For years it has been the practice in most mills to use data from some standard construction book which gives filling numbers to make a particular weight of cloth. In most instances, it is found that the filling numbers, as given, vary somewhat from those actually required. The proper filling yarn is then found by trial and error—sometimes a costly method.

Since the filling yarn number required usually depends on so many factors which are peculiar to each mill, the problem of finding the correct one can hardly be solved with construction tables from reference books. The factors involved are: (1) the amount of size added to the warp at the slasher, (2) the amount of shedding at the loom, (3) reed spread, (4) number of selvage ends, (5) warp contraction. In view of this, it is obvious that each plant must substitute its own set of conditions into a general formula if it is to get a correct answer—an answer which will result in less loss of time and production as well as a reduction in off-weight seconds.

The greatest difficulties encountered in establishing suitable formulas lie in the predetermination of accurate warp contraction and the percentage of size remaining on the warp after weaving. There are, of course, several well established formulas for determining warp contraction, but they all require that both filling and warp yarn numbers be known, so they are not usable when determining the filling yarn number.

It is also hard to determine the amount of shedding at the loom for a cloth that has not yet been woven but is merely being planned. We made a number of laboratory tests but found nothing definite. We then took certain known facts about many constructions previously woven, and knowing the shedding on these, we figured backwards to determine the average percentage of size on

STEP I
CALCULATION OF WARP CONTRACTION

IT IS ASSUMED THE CONSTRUCTION OF THE CLOTH IS KNOWN. THE WARP YARN NUMBER IS ALSO KNOWN, AND AN APPROXIMATION IS MADE OF THE FILLING NUMBER.

A = 44 (PICKS PER INCH) B = 40 (SLEY)

C = 26 (APPROX. FILLING NO.) D = 21 (WARP NO.)

$$E = \text{AVG. YARN NO.} = \frac{A+B}{B/D+A/C} = \frac{44+40}{40/21+44/26}$$

$$E = 23.35$$

— SOLVING FOR WARP CONTRACTION —

$$\text{WARP CONTRACTION} = 1 - \frac{1}{A\sqrt{\frac{1}{A^2}+\frac{1}{840E}}}$$

SUBSTITUTING FROM ABOVE:

$$\text{WARP CONTRACTION} = 1 - \frac{1}{44\sqrt{\frac{1}{44^2}+\frac{1}{840\times 23.35}}}$$

$$= 1 - \frac{1}{44 \times .0238}$$

$$= 1 - .955$$

$$= .045 \quad \text{OR} \quad 4.5\%$$

Filling Numbers

By P. S. LEACH
Industrial Engineer
Consolidated Textile Co., Inc.
Lynchburg, Va.

the warp in the cloth after weaving. We were finally able to obtain figures for the percentage size content of the warp for a number of different constructions and for different size formulas and yarns. We now use the averages established, substituting them into our calculations to permit us to figure filling yarn numbers for cloth yet to be woven. Gratifying results have been obtained in using this procedure.

Having a figure for percentage of size on the warp in the cloth, there is a way to calculate the filling yarn number from a general formula applicable to any mill. Actually, there are two formulas, one to determine the warp contraction, and one to calculate the filling yarn number required to produce the proper cloth weight. The examples in the boxes show how the calculations are made. It is necessary to first solve for warp contraction so that this figure may be known and substituted in the second set of calculations.

The formula for warp contraction, given in Step 1, is only one of many that might be used, but it has been found most accurate in solving for warp contraction when the filling number has to be approximated.

Note that it is necessary to assume a filling yarn number when solving for warp contraction. If this assumed number should be too far off from the yarn number finally determined in the second step, a new calculation must be made using an approximation closer to the one found in the preliminary calculation.

It will seldom be necessary to run the calculations more than twice. For example, if in an exaggerated case, filling had been assumed to be 20s in figuring warp contraction, and then a filling number of 40s was indicated upon completion of the second step, it would be wise to go back and recompute both steps. using about 38s as the estimated filling number in Step 1. However, if the calculated number and the assumed number were fairly close, there is no need to recompute—the change in the final answer would not amount to much.

It is apparent that the actual warp contraction and reed spread may vary slightly from these calculations, but the figures for the percentage of size left on the warp after weaving are dependent on these theoretical figures, and it

STEP 2

CALCULATION OF FILLING NUMBER

KNOWN DATA

A = 37½ (WIDTH OF CLOTH, IN.)
B = 40 (SLEY)
C = 44 (PICKS PER IN.)
D = 21 (WARP NO.)
E = 5.80 (CLOTH WT. IN LB/YD)
F = .112 (11.2% WARP SIZE IN CLOTH)
G = .0450 (4.50% WARP CONTR.)
H = 40 (TOTAL SELVAGE ENDS)
Z = 1 (ENDS PER DENT)

— SOLVING FOR FILLING YARN NUMBER —

J (TOTAL SINGLE WARP ENDS) = AB + H = 1540
K (YDS. OF WARP ENDS PER YD. OF CLOTH) = J ÷ (1 − G) = 1613
L (LBS. UNSIZED WARP PER YD. OF CLOTH) = K ÷ 840D = .0914
M (LBS. PER YD. OF CLOTH) = 1 ÷ E = .1724
N (LBS. SIZED WARP PER YD. OF CLOTH) = L (1 + F) = .1016
Y (LBS. FILLING PER YD. OF CLOTH) = M − N = .0708
P (REED COUNT) = .95 (B − 1) ÷ Z = 37.05
Q (REED SPREAD) = AB ÷ ZP = 40.49
R (YDS. FILLING PER YD. OF CLOTH) = CQ = 1782
S (FILLING NUMBER) = R ÷ 840Y = 29.96 (USE 30's)

THE CALCULATIONS ABOVE CAN ALSO BE EXPRESSED IN THE FORMULA GIVEN BELOW.

$$S = \frac{ABC}{.95(B-1)\left[\frac{840}{E} - \frac{(AB+H)(F+1)}{D(1-G)}\right]}$$

follows conversely that in calculating an unknown filling number by the same method, an answer will be obtained which will be quite close—within half a number in most cases. This method has eliminated trial and error figuring of filling in our mill, and its success is shown by the results listed in Table A. The calculations made were based on 14% size in the warp at the slasher and 11.2% after weaving. This figure will, of course, vary from mill to mill.

TABLE A

Construction		Calculated Number	Actual Number
38"	96 x 64 2.85	30.4	30
36½"	80 x 56 5.00	38.9	39
36"	60 x 56 4.00	25.5	26
37½"	40 x 44 5.80	29.9	30
39"	68 x 72 4.75	41.3	41
40"	44 x 40 5.50	32.0	32
45"	64 x 56 4.75	41.1	41
36½"	80 x 60 4.85	38.7	39

This table shows actual results using the formulas presented to calculate filling counts needed to weave cloth of a required weight. In these constructions, 14% size was added at the slasher and this resulted in 11.2% increase after weaving.

Knitters' Week in Atlantic City

Staff Report

REPRESENTATIVES of the knitting industry, and especially of the hosiery branch, had a busy week in Atlantic City (April 30-May 4). Activities included the 14th Hosiery Industry Conference, the 47th annual meeting of the National Association of Hosiery Manufacturers, and the 40th Knitting Arts Exhibition.

The KAE was much larger than any show heretofore; more exhibitors showed their wares, more floor space was taken by the exhibiting companies, and count of visitors taken shortly before the show closed indicated that more mill men attended.

A preview of the knitting industry's big week appeared in the April issue of this magazine, along with many technical articles of interest to this important branch of American textiles. Equipment which is new to the industry and which has not previously been described in the editorial pages of TEXTILE INDUSTRIES, *is listed in this issue in the New Equipment section in so far as space permits; items not published in this issue will appear in next month's publication.*

Constantine Report. Earl Constantine, president of NAHM, submitted his annual report. Highlights were:

Although NPA has been compelled to restrict the use of natural rubber (principally used in elastic tops of hosiery), it is hoped that the requirements may continue to be taken care of. Annual use is estimated at about 500 tons.

It was Mr. Constantine's opinion that short of war, the essential nylon needs of the manufacturers of women's nylon stockings would likely be provided, though there is a possibility that the amount made available may require a reasonable reduction in the rate of production.

He announced that the National Defence Bulletin service of the NAHM has been extended to all hosiery manufacturers, irrespective of whether they are members of the association.

Standards. In the field of standards, Mr. Constantine was able to report that progress is being made on the mechanical leg form and that final tests of the repeatability of the mechanism are presently being undertaken. Also concerning standards, he reported on the NAHM committee and its cooperation with the AATCC for developing a standard method for measuring the shrinkage of woolen hosiery.

Accept Government Service Willingly. Robert M. Hanes, president of Wachovia Bank and Trust Company, Winston-Salem, N. C., said that in addition to paying very high taxes, industry members will be called upon for personal service to the government, and he called for willing acceptance of this responsibility. He also emphasized that while accepting these sacrifices, industry members must insist that the federal government show a willingness to cooperate by eliminating all non-essential spending of the taxpayer's funds.

NAHM Officers

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Vice-Chairman
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Beamer Drive Demand Satisfied

by controlled speed a-c motor

A LOW COST variable speed beamer drive is compounded from an electric induction clutch integral with a standard squirrel cage motor. Gradual acceleration and uniform winding tension from empty to full beam without gear shift, pulley transfer, or full power supply rectification is featured in this simple combination.

Staff Prepared

EXCLUSIVE

WARP BREAK-OUTS are a major deterrent to running most constant speed motor driven beamers at higher available speeds. Acceleration from zero to the operating rpm in this type of drive is practically instantaneous. In other words, the higher the operating rpm, the greater the acceleration. The tensile strength of warp yarn is seldom great enough to tolerate the initially tremendous drag of all the beams or cones in the creel during the period of an extreme acceleration. The start-up must be sufficiently gradual to allow the yarns to adjust elastically to the load.

At the expense of production the operating rpm is usually reduced, though potentially higher velocities are allowable once the momentary inertia of the static load has been overcome. This differential in rpm becomes a factor of understandable concern when it is interpreted to mean the loss of 40 or 50 yards per minute in beaming output.

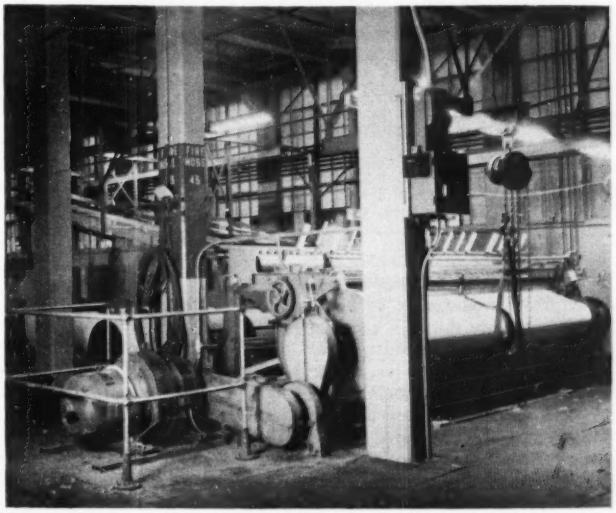
There are a number of variable speed d-c drives on the market which will permit slow starting and a gradually increasing winding speed up to running rpm. Their range of versatility makes them highly desirable, but sometimes the situation denies their usage. Among other items, the mill may not have sufficient space for setting up the several components of a d-c drive.

Another alternative is one which Alexander Smith and Sons Carpet Company finds completely satisfactory—a system that converts the constant speed of an a-c motor rotor to a constant torque with variable speed output. Their Yonkers plant has this type of drive installed on loom, service, and sectional beamers. Warps are cotton, wool, synthetic, and composites.

The basic component around which the Smith drive is assembled is an electric induction clutch, more exactly described as an eddy current coupling. It is an electric magnetic device consisting of concentric rotating members. One member rotates at motor speed while another member follows at a slip dependent on an automatically controlled excitation.

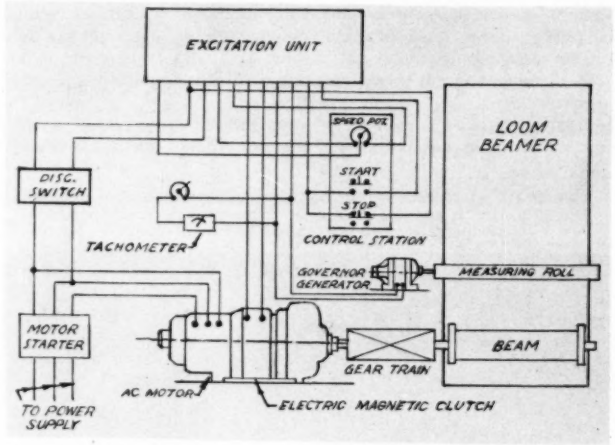
At full or "synchronous" speeds the slip reaches about 2 to 5%. If

THE 40 HP ADJUSTO-SPEDE DRIVE is shown at the loom beamer. Excitation unit is not visible although tachometer generator mounted on the beamer measuring roll may be observed.



CONTROL BOX housing speed indicator, acceleration time adjustment potentiometer, speed control, and start-stop push buttons are pointed out by Michael Tighe, second foreman, Axminster weaving. The speed control potentiometer knob is secured by a locked cover to prevent tampering.

SCHEMATIC DRAWING of Adjusto-Spede drive applied to loom beamer as pictured on the preceding page.



the speed of the motor under load is 1750 rpm, the output of the clutch shaft would only be about 1700 rpm. Since this is a constant torque unit, it is necessary that energy be dissipated as heat when the speed is reduced below full speed. The clutch drum is built with fins in order to move the air and transfer heat into the air. Consequently, the unit must be well located for ventilation. A temperature rise of 50 to 70 F in cooling air is allowable.

Controls. In addition to motor and clutch the Adjusto-Spede drive includes a governor generator, a tachometer, a control station, and an excitation panel. In round figures, $1500 is given as the cost of the complete assembly. The clutch is furnished by Dynamatic Corporation with an integral Louis Allis air cooled squirrel cage motor.

Horsepower of the motor installed on the loom beamer is 40. A test recently terminated, which involved 12 beams (each weighing approximately 900 lb) at 140 yards per minute wind, showed that 38 hp was required. This same beamer was formerly equipped with a similarly operating 15 hp motor and clutch. At that time nearly 32 hp was required for a wind of 120 yards per minute. In several months of operation at this level no overloading trouble was experienced. The motor did tend to heat up, but maintenance was negligible nevertheless.

These data would indicate that considerably higher running speeds or loads than stated previously can be accomplished with a 40 hp motor without detriment to material. At Smith the peak speed is governed not so much by the maximum inherent in the drive as by the arbitrary agreed upon between management and labor.

Excitation required by the clutch is direct current delivered to the field spider. An increase of excitation increases the torque between armature drum and field spider and thereby increases the output speed. Since the torque effect is magnetic in origin, the clutch will adjust itself to starting the load when the torque rises to a sufficiently high value. Thus, the load will not be started with a jerk.

The direct current voltages are controlled by an electronic panel containing the necessary transformers and gas filled vacuum tubes. The latter are of the grid control type which have the characteristic of being able to shut off or turn on the direct current quickly in response to governing action. They also can limit the percentage of the alternating current cycle which actually produces current in the direct current portion of the d-c output.

An Alnico generator mounted on the beamer's measuring roll serves as the speed control sensing device. The electric governor is used to operate an electric speed indicating tachometer, graduated in yards per minute, in addition to its

Elsas Warns of Dangers of Price and Wage-Fixing Policy

The cotton textile industry is being subjected to two pressures, according to a recent statement by Norman E. Elsas, chairman of the board of Fulton Bag & Cotton Mills, Atlanta, Ga:

(1) The inflationary pressure of wage increases in defense and other industries due partly to economic factors and in larger part to situations created by the government itself through a setting of artificial wage scales in defense plants.

(2) The pressure to sustain a high rate of production in our present emergency and in the battle against inflation.

Terming government's policy a "double standard of morality," Mr. Elsas said:

"Where there are existing labor agreements providing for periodic and automatic wage increases, which are clearly and obviously inflationary, the whole pressure of the government's efforts is to find a way to adapt its wage policy to permit these contracts to be fulfilled to the last fraction of a cent.

"On the other hand, where equally binding contracts are made for purchase and sale of agricultural and manufactured goods by individual citizens, business concerns, and the government itself, the policy of the government's price administration is to disregard not only the commitments of the contract but the cost and losses incurred by the parties to these contracts in order to maintain some synthetic, uneconomic, and unrealistic pricing theory."

If the mills are squeezed between downward pressure on their prices and upward pressure in their materials and labor costs, it remains only a question of time before they will have to curtail operations, he said.

primary function of supplying excitation to the electronic unit.

Speed setting controls for the Smith beamers are remotely located from the excitation panel but at a station convenient to the beamer operator. On the control panel are the speed indicator, start-stop push button, and potentiometer for speed regulation. The potentiometer knob is adjusted to the desired speed level and locked in place to prevent tampering with setting.

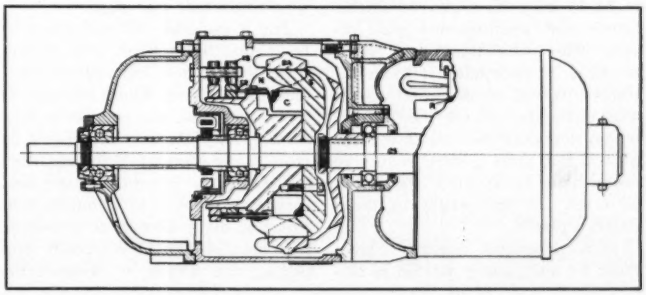
The electronic circuit has provisions for control of sensitivity, maximum speed, and acceleration. Of greatest interest is the acceleration control feature. It is the key to shockless start-up of the beamer; the mechanism which minimizes the strain on warp yarns during acceleration. The potentiometer for this control is found inside the operator's control box. Adjustment of its slotted shaft governs the time elapsing between start and pre-set speed. Seven seconds' time is considered suitable for the Smith beamer.

The sensitivity adjustment is used to smooth out speed changes and prevent hunting. The maximum speed adjustment restricts the beaming velocity to the highest desirable with the speed control potentiometer set at 100 (maximum). The speed range is 10:1.

Operation. The a-c motor is started with a conventional start-stop push button. The coupling acts as a completely disengaged clutch and transmits no power when only the motor is energized. The coupling is magnetized and thereby engaged when the shipper rod of the beamer is thrown to the running position. Acceleration to the pre-set speed takes place over a period of seven seconds. The drive speed increases to whatever proportion of the total available speed is set at the speed control potentiometer. It will run at this speed regardless of load variation within the capacity of the drive until the potentiometer is reset to another speed.

The starting characteristics are such that reduced maintenance expenses for the driven machinery are expected. The biggest gain is from the higher production rate permitted. With less dependence on operator skill, quality of the finished warp with respect to uniformity of tension and build is much improved. Down time is relatively low while preventive maintenance chores are light. Tubes are guaranteed in excess of 2000 hours. Bearings are prepacked and need be serviced only once every three years.

THE A-C MOTOR ROTOR (R) is keyed to the shaft (CS) and an armature drum (EA) is mounted as part of the electric induction coupling. Drum (EA) rotates constantly with the motor rotor. Inside of (EA) is a magnetic field spider having north and south poles, and energized by annular coil (C). Direct current is fed through the slip rings (SR) by means of two brushes (CB). The torque is created between the poles (NS) and the inside smooth surface of (EA), rising to high values at high slip speeds.



Wartime Difficulties—

more maintenance problems

THE TEXTILE INDUSTRY should not only be permitted to get the relatively small amount of materials required to keep its machinery in good repair, but it should also be permitted to keep the skilled workmen equally necessary to keep the machinery properly producing.

EXCLUSIVE

By RINGGOLD ARDEN

FULLY as important as a dependable supply of machinery parts is a dependable force of fixers and repairmen. It takes time to make a really good fixer, since his work is not only affected by his mechanical skill, but his temperament. A mill with a good shop force of skilled workmen, and good fixers in all departments, will operate more efficiently than a mill with a poor maintenance crew.

Good maintenance often reduces the need for repair parts. An exceptionally critical repairman might be inclined to replace slightly worn parts before a less capable man would think they required replacement, but generally replacement of parts that a good repairman thinks should be replaced will prevent wear and damage to other parts, which will save materials and money in the long run. Furthermore, the frequent cleaning and scouring of machines which gets chokes out of them and rids them of old dirty lubricants filled with foreign matter which is cutting out bearings and wearing gears, will add a little to the labor cost of keeping a plant going, but also add a lot to its efficiency and the quality of its production.

In wartime, it is extremely difficult for a normal manufacturing plant to keep its crews of skilled fixers and maintenance men intact. The establishment of some wartime "boondoggle," with an unlimited payroll at unlimited wages, will not only attract the riffraff which normally swarms into these places, but offer a very seductive enticement to trained operatives who get the top wages in these defense plants.

That necessary defense plants must be adequately staffed is elementary, but that so-called defense plants which are nothing but "boondoggles" should be set up to drain people from much more important employment is to be deplored and opposed.

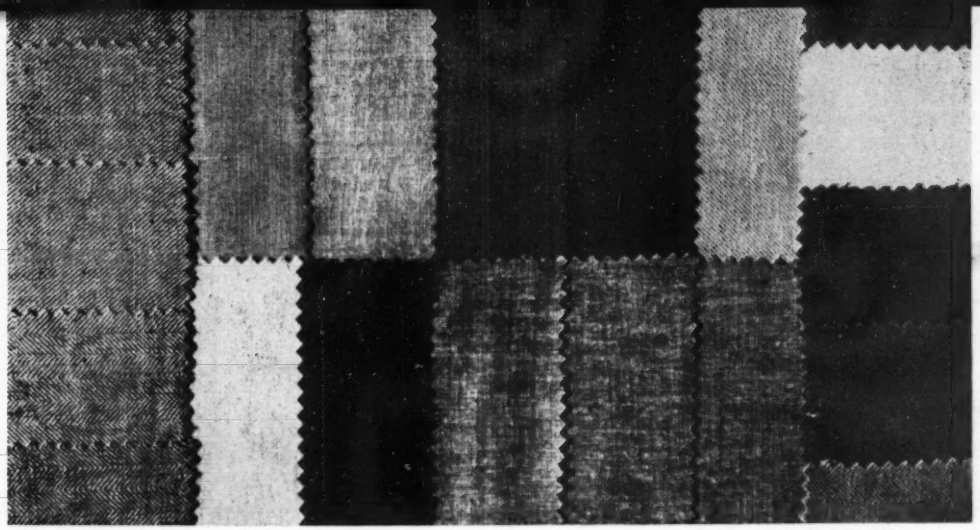
There is probably not an employer in the textile industry who could not tell some tale of woe about valuable employees being tolled away to some pseudo-defense establishment to do absolutely nothing, or to share practically nothing with other operatives. During the last war there was an endless number of these alleged war plants that sprang up all over the country, and which accomplished little of value. They did bleed the textile mills of much of their best trained help, and a textile mill is a very important war plant.

For a so-called defense plant to be loading its payroll with people urgently needed somewhere else, and then giving them nothing to do, is criminal; yet reports of this same general nature have come in from many sections of the country. It seemed to be nothing unusual for a war plant to hire four or five times as many people as it needed just because the Government was paying the wages, or worse still, because the contractor operating the plant was getting a cut on all he could waste.

When these defense establishments pad their payrolls with the kind of riffraff that a cotton mill management would not want to have around the premises, the only serious damage done is the waste of government money and the consequent inflation caused by paying people money for doing nothing. When, however, these plants, through their ability to pay almost unlimited wages, are tempting skilled operators in key positions to quit jobs where they are badly needed, to go and loaf in a plant where they are not needed at all, the money is wasted and the inflation is created, and the war effort is hindered by handicapping manufacturing plants producing urgently needed military equipment.

EDITORIALS in some newspapers recently claim that the South is not getting its "share" of the defense orders being placed. The implication seems to be that the same plan should be followed in this war as in the last one, when every section of the country was supposed to get

(*Continued on page* 199)



SWATCHES OF DYED FABRICS may be easily marked for color identification by using symbols which accurately describe the color. All quantities involved in producing any color are readily measurable and easily determined, and a standardized system would save countless difficulties.

A Scientific Approach to Color

offers color standards for universal use

By F. W. LANCASTER

EXCLUSIVE

IN THIS country, every company that manufactures pigments, for use by the colorists, has its own standard. None of these various color standards describes color accurately. At present, colors are named in a terminology that practically defies anyone to describe a given color. Guesswork in dealing with colors is no longer necessary. This treatise embodies the Ostwald color theory in a system of standards for universal adoption. The proposed system has many virtues and is worthy of serious consideration as a possible solution to the chaotic condition of our color identification methods.—The Author.

AN IMPORTANT phase of light interaction with matter is that of color production, its standardization, and application.

Color is a psychological response due to the nerve stimulation of the retina of the eye. These stimuli may be produced by light energy of different wave lengths and frequencies, or by pressure, electrical currents, chemical interaction, heat, and sound waves. The major portion and most useful phase of color is that produced by light. The psychology of color involves such factors as color preference, attention value, effectiveness, symbolism, aesthetic, and emotional value.

Many of our color associations are due to the results of civilization and culture. The child grows through progressive associations, and the greater the intelligence, taste, culture, and education, the greater becomes the complexity of things. Hence, the original absolute preference for color gives way to taste, environments, fads, habits, and fashion.

Color has become a universal language and a means for conveying and portraying impressions and expressions. Civilization in its various stages of evolution, society, customs, creeds, fortunes, religious rites, and the numerous other phases of human endeavor have all played their part in the symbolizing of color. Many of the symbolisms have been brought to us in mythology, literature, and common usage. Ideas, feelings, and moods were readily associated with the various colors of nature which gradually assumed certain attributes and symbols.

Attention Value. All the characteristics and properties of color contribute toward attention value. Such characteristics of color involve realism, usefulness, symbol-

ism, congruity, attractiveness, vividness, appropriateness, appeal, distinctiveness, contrast, and harmony. All problems of color application in industry are subject to scientific investigation, and data are constantly being obtained which involve the various characteristics of color and the influences produced by color usage. Hence the effectiveness of color may be analyzed in terms of the responses it happens to produce.

The analysis of color involves the questions as to whether color draws attention, possesses appeal, adds novelty, creates vividness, associates symbolism, promotes distinctiveness, depicts realism, provides usefulness, stimulates suggestion, characterizes trademark and product, denotes quality of product, increases attractiveness, and impels activity.

Evolution of Color Science. The science of color and its development has passed through many stages of evolution, and cannot be claimed by any particular person, group, or field of endeavor. Many theories of color science have been proposed but the majority of them, including some that are commonly used in industry at the present time, are based upon the erroneous tri-color theory propounded by Sir Isaac Newton. It is known that three suitable chromatic colors will give all possible hues by admixture; however, they will not produce all possible colors.

Consistent, Precise Terminology Needed. There is much confusion existing in most color theories in the lack of consistent and precise terminology. We see more color and feel its effects more than any other sense perception; yet in the various applications of color, the science is still in a more or less bewildered state. Many attempts have been made to put color on the same level of universal comprehension as are the science and art of music. Music has developed and become so standardized that it is a universal language with symbols and terminology expressing a common understanding to all people. In contrast to this, color is far from having a universally adopted standard.

In this country alone, every company that manufactures pigments for use by the colorist has its own standard. Furthermore, the layman or any person or any manufacturing company dealing in materials requiring the use of color in any design or combination of colors is at the mercy of such a variety of color standards that everyone is thrown into a state of confusion and total bewilderment. None of these various color standards describes color accurately because words alone will not describe color.

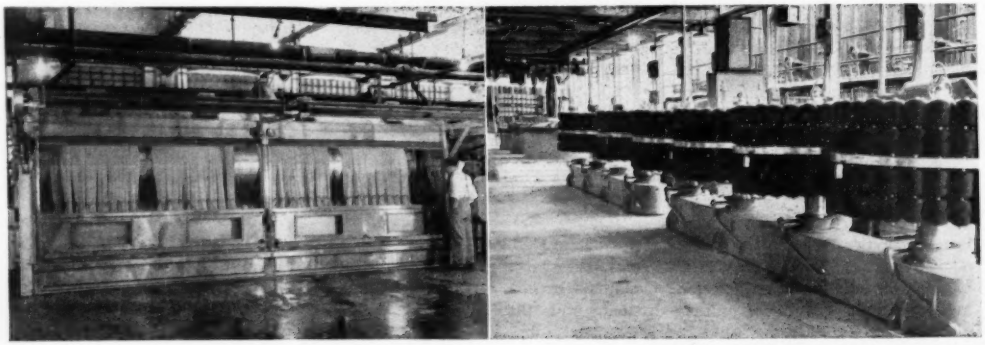
Colors are named at present in a terminology that practically defies anyone to describe the color. From the layman to the artist, scientist, and craftsman, no one knows exactly what color he has and lacks all means for conveying his ideas as to what he wants. Such names as Alice Blue, Willowick Blue, Peach Tint, Montrose Coral, Avalon Blue, Pale Jonquil, Belvedere Cream, Midland Green, Belmont Ivory, Cameo Rose, Heather Rose, Beechwood Beige, Stratford Green, Peach Bloom, Dusty Rose, Antique Green, Wedgwood Blue, Pottery Blue, Pea Green, Cerise, Royal Purple, Baby Blue, King's Blue, Copenhagen Blue, Azure Blue, Sky Blue, Invisible Green, Olive Green, Golden Dawn, Titian Glow, Charmant, Pagan, Apresmidi, and thousands of others, all indicate that colors are named for animals, plants, kingdoms, savages, or anything other than an intelligent connotation. Although these may be beautiful names and no doubt have their specific purpose, such characterization of color gives no aid whatsoever in the realm of color harmony or color matching. As another illustration, four of the largest paint and dye manufactur-

Human Reaction to Colors

The therapeutic value of color ranges from calm to stimulating. Color is an emotional experience. It is something alive. We must enjoy its emotional values. Our emotions reflect our moods and feelings. A feeling of warmth or coolness can be experienced with a color. Colors are inviting or repulsive. Our intellect appreciates color by the understanding of color relations to each other or why they are attractive.

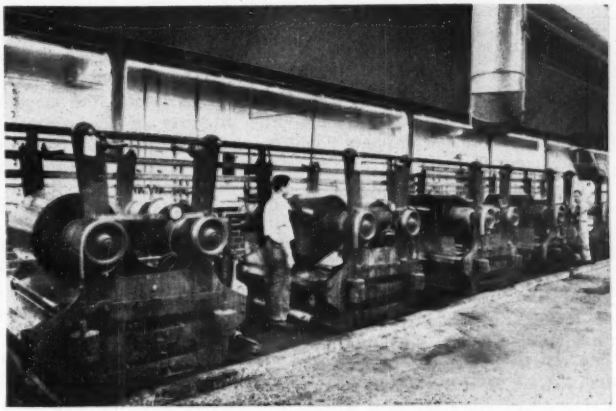
From a paper presented by J. A. Crumley before the AATCC at Winston-Salem, N. C., April 2, 1949.

DYE PLANTS faced with practical color matching problems may be able to simplify the procedure in duplicating colors by using a standardized system wherein symbols describe the color. For example: assume a color point symbolized by the letters ng; whereas the white content of (n) gray is 5.6% and the black content of the (g) gray is 78%. The sum of the three characteristic quantities must equal 100%; therefore the amount of full color remaining must be 16.4%.



ers presented their color charts and each had a different name for the same color: mist gray, sand gray, ash gray, early dawn.

One of our present needs in the realm of color is the standardization of terms which will accurately describe the color. Even such common terms as hue, saturation or purity, rightness, tone, tint, shade, intensity, and chroma, are not clearly understood by many technicians, let alone the average layman. A standardized color notation is desired and needed to accurately describe all the characteristics of a given color. Such a notation must necessarily involve all the factors which influence the quality of the color—that is, its hue, saturation, and brightness.



DUPLICATING COLORS and mixing new colors may be done on a scientific basis in all applications of color. Color harmony may be assured without guesswork on several separate runs of fabric processed on jigs or other equipment.

Characteristics of Color. Hue is defined as the sensation produced by a given spectral region. In short, every wave length of the spectrum is a hue.

Saturation or purity is a measure of the relative amount of white light mixed with a given hue. The greater the percentage of white light, the less saturated the color becomes.

The dilution of a hue with white light produces tints; hence, tints are unsaturated colors.

By the admixture of black to a hue, neither the hue nor the saturation is altered, but the brightness diminishes. The resulting colors are known as shades or tones.

Brightness is the relative amount of light that is reflected from a given colored surface.

Absolute brightness can be measured by comparing the reflectivity of a colored surface with a standard surface of known value. Since the brightness also depends upon the intensity of illumination of a given spectral region, reflection coefficients for various spectral regions and colored surfaces must be determined as compared to standard white light. Since pigments and dyes have different reflection, transmission, and absorption coefficients, they react differently for different wave lengths of light. Most pigments reflect more than one wave length of light, at the same time producing a complex color. The spectral colors themselves are invariable. Such terms as chroma, purity, and intensity, are confused to mean saturation; and likewise, luminosity, value, hues, and bihues, are often misused for brightness. These facts alone indicate that there is no reason for not developing a standardized system since all quantities involved are readily measurable and easily determined.

Incorrect Theories in Use. It is inconsistent with scientific intelligence to believe and teach false assumptions which were made and are made even to the present time in most text books on color science. These books in practically all cases use the Newtonian-Helmholtz color theory. In this theory, there are assumed three primary colors for the light theory: red, blue, green; and for the pigment theory: red, blue, and yellow.

The first error, which we shall show later and which was proved by Schopenhauer, is that three primary colors should not be assumed. Every hue and color is both a primary and a complementary. Hence, we must have an infinite number of primaries and complementaries. Any one can prove this fact for himself in a few seconds by merely gazing intently at a brightly illuminated colored surface; then, by closing the eyes, the image of the surface will be seen in the exact complementary color. Or, if instead of closing the eyes, the attention were directed to a highly illuminated white surface, the same phenomenon would have occurred.

A further error was introduced in that no mention was made concerning what red, what blue, or what green was involved. Neither was it assumed that these colors had saturation, brightness, or intensity—that is, whether they possessed any white, black, or gray content, or whether they were pure or saturated colors. It was further assumed and is still mentioned in color texts that the addition of the three so-called primary colors (red, blue, green) would produce the sensation of white. This result is actually found to be impossible. A neutral gray (a very dirty gray) actually results. As will be seen later, only a neutral gray color results by admixture of any primary and its complementary. A complementary color is defined as that color which, when optically and psychologically mixed with a given color, produces a neutral gray. In all cases, *complementary colors are defined only by their hues and not by their content of white and black.*

Two colors which are complementary in one kind of daylight are not complementary in another kind of light, and two colors which are complementary at ordinary reading distance are no longer complementary as the distance is

increased. All of the older color theories gave no means for measuring or defining the properties of colors, no means for matching colors, nor any fundamental basis for producing color harmony, which should be the ultimate goal for any color theory.

The problem of matching colors gives endless worries to the colorist, especially the textile dye chemist. Under the old systems of color theories, it has been so difficult and practically impossible to make absolute color matching that industry could not guarantee any satisfactory results. Much valuable time is still wasted by the cut and try (mostly guess work) haphazard methods used in many of the large plants today. The problem of matching should depend upon accurate measurements with proper equipment. Many more errors and difficulties obtained by the use of the older color theories could be discussed, but those already mentioned should be sufficient to warrant the universal adoption of one color theory in particular—namely the *Ostwald Color Theory* which has so uniquely solved the color problems of many European industries.

A Scientific Color Theory. Dr. Wilhelm Ostwald's color theory is sound and logically founded upon actual scientific, experimental facts, both physical and psychological. From actual measurements by means of a spectrophotometer and a photometer, it was found that all colors, actually seen in nature, contain three components: full color or spectral hue, white, and black. Hence, Dr. Ostwald realized that standardization was the only solution for accurately specifying the properties of color, and that some means must be found for standardizing first the white and black content or gray of any given chromatic color.

All psychological responses, of which color is one phase, obey the Weber-Fechner* law. This law states that the least perceptible change in a stimulus or energy affecting any of the several sense organs, under similar and fixed conditions, bears a definite relation to the amount of the stimulus. This law may be represented by a differential equation which relates the change in the intensity of the stimulus as compared to the least perceptible stimulus and the sensation produced by this change: $\frac{dI}{I_o} = kdS$, where (dI) is the change in stimulus or intensity, (I_o) is the threshold or limiting stimulus, (dS) is the change in sensation produced, and (k) depends upon the person.

By integration, the aforementioned law may be represented as a logarithmic equation which is more convenient for application to color theory: that is, $\log \left(\frac{I}{I_o}\right) = k(S-S_o)$, or the logarithm of the ratio of stimulus to threshold value is proportional to the sensation received.

The production of a sensation cannot take place without the expenditure of energy, and the threshold is the limiting value of energy below which (for small changes in stimulus) or above which (for large changes in stimulus) no change in sensation is perceived. This threshold value for color sensations determines the possibility that two colors may appear identical and yet be different.

Every substance rejects a certain definite fraction of the incident sun light. If all this light is rejected and at the same time is dispersed, the surface is called white. This rejection is determined only by the constitution of the surface and not on the nature of the illumination or the sensitivity of the eye. Hence, an *Ideal White* surface is an ideal or limiting case. For a practical standard, one of the whitest possible surfaces found in nature is Barium Sulphate whose error from the ideal white lies exceedingly close to the threshold value. It contains 89% white and 11% black content. An *Ideal Black* surface is one which absorbs all incident light and reflects none. A *Neutral Gray* surface is one which rejects the same fraction of all luminous rays.

Mechanics of Color Analysis. Suppose a surface, such as Barium Sulphate, whose whiteness is known in terms of ideal white, has been chosen as the standard. Then all of the achromatic or gray colors can be definitely measured for the amount of white and black content. In one satisfactory device, the barium sulphate block is arranged in a photometer cell along side of the given sample of surface to be measured, and the illumination is decreased on the barium sulphate until its color matches or blends with the given surface. By using this method the percentage of white in the surface can readily be measured. On this basis, and with the idea of obtaining an octave of standardized gray colors (just as the musical scale is based upon the octave of tones), a geometric series of colors differing by a common ratio of 1/10, according to Fechner's law, was devised.

The first three increments were much too far apart in the color scale (or too far above the threshold value); therefore each of the three intervals were subdivided into ten equal divisions. Since this series of equal mixture differences did not produce equal changes in sensation, Fechner's law was applied again by using the numbers as logarithms and taking their antilogarithms. This antilogarithmic series divided the gray series into equal proportions of sensations. The average of adjacent pairs was then taken to approach a smaller number of grays above the threshold value. This geometric means series, being a definite logarithmic series of per cents of white content, was labeled by the letters of the alphabet.

The series was broken off at letter Z because there exists practi-

Psychology of Color

The psychology of color plays an important part in inciting attention, displaying and packaging, creating an emotional value, advertising and merchandising. Industrial leaders should realize the importance of developing the aesthetic value associated with the symbolism of color and increasing the effectiveness of color.

*A sensation increases as the logarithm of the stimulus.

cally no surface which reflects less light than the value represented by this letter. Each letter signified not only the percentage of white but also that of black, since their sum must equal 100%. From a practical standpoint, the foregoing series still had the points too closely connected, so that a standardized series was obtained by omitting each alternate letter and terminating the series at the letter (p) which signified the blackest gray or printer's ink. A standard gray octave, whose letters are to be used for producing color harmonies, resulted as follows:

	a	c	e	g	i	l	n	p
White	89%	56	35	22	14	8.9	5.6	3.5
Black	11%	44	65	78	86	91.1	94.4	96.5

The (a) gray with 89% white, 11% black becomes the Barium Sulphate standard for comparing and measuring all white and black contents.

The purpose of standardizing color, beginning with the gray series, is to produce artificially colored washers, papers, textiles, etc., in a definite and precise manner. This includes such processes as the production of paints, dye solutions, matching and reproduction of dyed or painted materials, the labeling, ordering, designing, forming of harmonies, and card cataloging.**

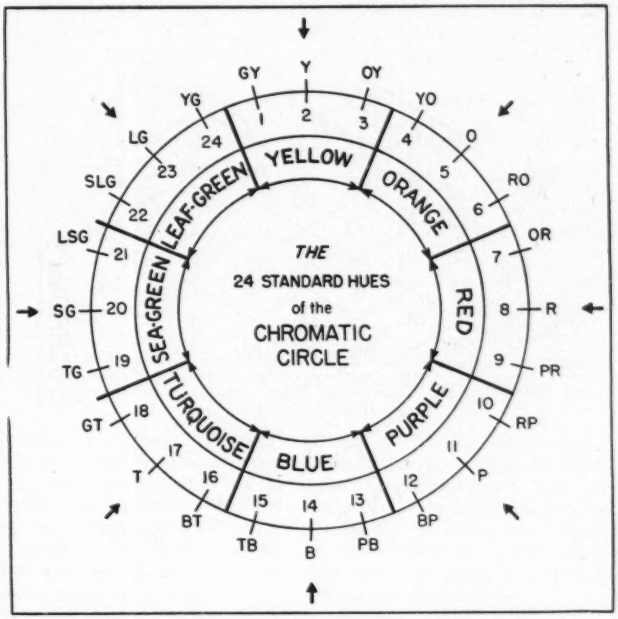
The symbols can be written, telegraphed, or telephoned, and the complete properties of the color are entailed in its symbols without giving it any superfluous nonsensical names which do not describe the color. The greatest achievement made possible by this standardized system is the production and systematic attainment of absolute harmonious combinations of colors. For example, if an automobile is upholstered or painted with gray (g) and trimmed with grays (c) and (l), a highly prepossessing appearance is obtained. The automobile is attractive to the purchaser, and is a source of pleasure to the possessor.

Chromatic Colors. The second and larger color group to be standardized is the chromatic group. This group adds the attribute of *Hue* or spectral color or full color. Any color containing only hue, or one containing hue plus white or black or both is called a chromatic color. It was found that by starting with five pure dyes of colors red, orange, yellow, green, and blue, and by mixing adjacent pairs with each other, and by continuing the process of adjacent mixing, a few hundred chromatically colored strips could be produced within the threshold value. Any further mixing of adjacent pairs made them indistinguishable. Furthermore, it was found that when these strips were arranged in a circle, colors at intervals of 180° apart were complementary to each other.

Psychologically we distinguish and react towards four colors known as Fundamental Colors: red, blue, sea green, and yellow. In addition to these, there are four Subordinate Colors: orange, purple, turquoise, and leaf green. These together give eight principal colors. However, the names do not necessarily describe the colors but merely are given as hue regions. Since three quantities are necessary to determine specifically a unique condition (for example three notes in music determine the simplest harmony or diatonic chord; three points determine a circle, etc.), the standardized chromatic circle was chosen as the simplest circle of twenty four chromatic hues, three hues for each of the eight chromatic color regions—all within the threshold value.

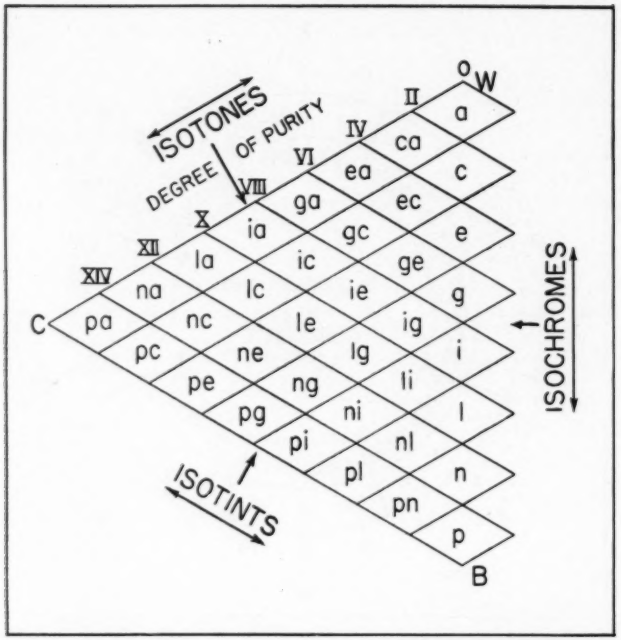
There is no simple relation to be formed between wave length, frequency, and colors, and still conform to Fechner's law, although each is regulated by law. It is therefore concluded by Ostwald that any attempt to base color harmony in any way on frequencies must necessarily become a failure due to the extreme complications arising in this connection. The Ostwald theory for use in color harmony is not dependent upon these controversies nor those of the tri-color or four-color theories, but treats every possible color as a primary with its corresponding exact complementary.

Having described the formation of the standardized chromatic circle consisting of twenty-four hues with no consideration of white or



THE CHROMATIC color circle based on Ostwald's theory.

**Color albums are now available at a reasonable cost (approximately $150.00) from the Container Corporation of America, 38 S. Dearborn, Chicago, Illinois. Many large and small industrial concerns whose work involves color are using these albums for color design and color matching.*



THE STANDARDIZED monochromatic triangles. All colors of this triangle are of the same chromatic hue but possess variations in white and black content.

black content, in order to define color completely it is necessary to know exactly all three components—full color or hue, white, and black content. For any given color, the fractions of hue, white, and black must equal one hundred per cent.

Forming an equilateral monochromatic or one hue triangle with (C), (W), and (B) as the vertices, in which (C) represents pure hue of one of the twenty-four standard hues, (W) represents pure or ideal white, and (B) represents pure or ideal black, the sides (CW) and (CB) are divided into eight equal parts according to the standardized grays, and lines drawn parallel to each of these sides. The intersections of these lines form thirty-six rhomboids, twenty-eight of which lie inside the triangle, the other eight lying along the (WB) side. The eight rhombs along the (WB) side designate the eight standardized gray series a, c, e, g, i, l, n, and p. All colors of this triangle are of the same chromatic hue but possess variations in white and black content.

All colors in the line (CW) are admixtures of white with pure hue and are called tints; those colors along the line (CB) are admixtures of black with pure hue and are called tones; those along (WB) are admixtures of white and black and hence are the gray or achromatic series. All colors inside the triangle for any given line parallel to (CW) contain the same amount of black but varying percentages of hue and white. These colors are known as isotones or equal black content colors.

Those colors inside the triangle on any given line parallel to (CB) contain an equal amount of white with varying percentages of hue and black. These colors are known as isotints.

Those colors which lie on any line parallel to (WB) and the diagonals of the twenty-eight rhomboids contain equal amounts of hue with varying gray content. These colors are known as isochromes or the shadow series.

Since the isotints run parallel to (CB) and the isotones run parallel to (CW), each of the twenty-eight rhomboids is duo in character, being both an isotint and an isotone. In every case, the individual colors inside the triangle must be represented by two letters: the first to represent the white content and the second to represent the black content of the given color.

If we choose, for example, the color point rhomboid (ng), all the isotints through this color point end in the (n) gray while all the isotones end in the (g) gray, hence the given color point signifies the white content of the (n) gray (5.6%) and the black content of the (g) gray or 78%. Since the sum of the three characteristic quantities must equal 100%, the amount of full color remaining must necessarily be 16.4%.

The isochrome is the only series that possesses degrees of purity. These begin at zero degrees for the achromatic or gray colors, and progress in two-degree increments. For example, II, IV, VI, VIII, X, XII, and XIV.

The isotints and isotones have no degrees of purity but possess degrees of variations of quality, intensity, and brightness. Those colors in the triangle approaching the (W) vertex become paler; those approaching the (B) vertex become darker; and those approaching the (C) vertex approach deep, rich, or purer colors of the given hue. All colors inside the triangle are known as broken chromatic colors of the same hue.

If a monochromatic triangle is rotated about its gray or (WB) axis continuously, a color solid would be formed containing an infinite number of colors, the majority of which would be below the threshold value. In the standardized color solid, there are twenty-four monochromatic triangles (one for each of the twenty-four standardized hues) separated 15 degrees apart. Each triangle represents a large group of variations in hue below the threshold value. Each of these triangles, when broken off at the letter (p), contains twenty-eight monochromatic colors or variations of the same hue by admixture of white, black, and full color.

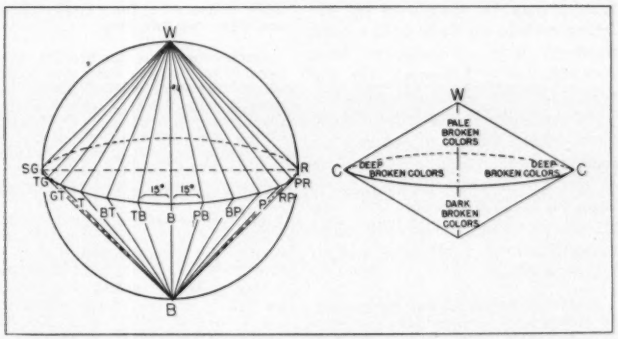
As each triangle is rotated about its gray axis, each of the twenty-eight color points describes a chromatic circle passing through all

of the twenty-four hues. Hence the total number of chromatic colors produced in the standardized color solid is 28 x 24 or 672. By adding the common gray series, the complete solid represents 680 colors.

Each of the color points composing any one of these rings contains the same content of white and black, or possesses the same value; hence each ring produced is known as an isovalent color circle. By rotation of the isochromes simultaneously, each series of isochromes generates a cylinder. As a result of the rotation there are seven concentric isovalent cylinders (one for each degree of isochrome purity), each cylinder having varying diameters extending from the gray axis outward toward the pure hue vertex.

Due to variations in the properties of materials that are to be dyed, it is necessary to standardize color for each of the various materials, such as wool, linen, cotton, silk, rayon, and the many new types of plastic fibers.

For all general purposes, this standardized color system becomes an ideal solution of color science. In all cases, equal distances in the color solid in any direction are coordinated to equal differences of sensation—a result made possible only by the application of Fechner's law to color science. The greatest contribution which this system has given to the designer and colorist is the scientific ability to produce or select absolute color harmonies.



THE COLOR SOLID. In the standardized color solid, there are twenty-four monochromatic triangles, separated 15 degrees apart. Each triangle represents a large group of variations in hue below the threshold value.

Color Harmony. It is well established that every art has its fundamental principle: music is based upon the principle of harmonious grouping of sound frequencies and intervals; architecture is based upon proportion; dancing on rhythm. Without balance, a building or superstructure may exist, but still possess no architecture; without harmony, we may have sound and noise, but no music; without rhythm, there may be motion, but no dancing; and without radiance, there may be light but no illumination. These same fundamentals are observed in the growth and development of plant and animal tissue, the formation of snow flakes, the creation of crystalline structures, the propagation of waves, the quantizing of energy, the development of atomic structures, the rise and fall of tides, the governing laws of society, the infinite variety of phenomena manifested in nature, and the creative ensemble of colors.

Harmony means conformity to law. Anything that produces pleasing or agreeable effects is harmonious. Some simple relationships are necessary for producing harmony in music, poetry, and architecture. These are: rhythm, symmetry, balance, poise, and meter.

All crystalline structures in nature are beautiful. Each type is formed by following definite laws which regulate their spatial or geometrical configurations of molecules and atoms according to their internal and external forces. Any disturbance of this ordered pattern results in an unbalanced, disruptive, or inharmonious condition. Nature tends to seek a harmonious state. Under this universal obedience to law, all life cycles of plants and animals function with perfect harmony so long as the environmental factors are not disturbed too severely. Variations of any controlling factors, in general, produce discord in the cycle, and evolutionary changes may result. However, a series of discords or changes of environment, by continued action and if repeated often enough, may eventually result in a new harmonious state.

Likewise in the realm of color science, equal intervals of color sensation produced by logarithmic changes of stimuli result in color harmony. Since the Ostwald standardized color system was developed upon the Fechner law of equal intervals of sensation, the application of the color solid to the realm of color harmony automatically and naturally forms a system of six classes of harmonies.

The classes logically follow from the procedure and steps of standardization of the achromatic or gray octave, the monochromatic triangle, and the isovalent circles, which give the first three major groups. The remaining three groups are formed from combinations of these elementary groups as follows: Associated Harmonies, formed by combining any achromatic group with either a Monochromatic or an isovalent group; Augmented Harmonies, formed by combining any isovalent harmony with any monochromatic isochrome, or isotint, or isotone group; the Ring-Star or Higher Order Harmonies formed by combining any isovalent or ring harmonies with the combined isochromes, isotints, and isotones of a monochromatic group with the total ring-star group possessing initially the same common color point—the resulting combination being known as a first order ring-star harmony.

Having formed a first order harmony, any color of this group may be selected upon which a new ring-star is formed. This harmony, combined with the first order, produces a second order harmony. Naturally, more and more complexity of color is produced as the orders are increased, but the

system may be simplified by deleting certain portions of the total harmony with all deletions done symmetrically. Likewise, all the colors of the standardized color solid are harmonious in relation to each other, but they are not all used at the same time to produce a harmony. Similarly, all of the keys on a piano would not be struck simultaneously with any expectation of producing a harmonious effect.

Achromatic or Gray Harmonies. In this group, consecutive, one-step, and two-step harmonies have been established according to the psychological equal intervals between the members of the gray series:

A C E G I L N P

Since all harmonies must contain a minimum of three colors, a series of consecutive grays may be taken in a matrix whose diagonal colors form a one-step matrix with the diagonals again forming a two-step matrix as shown:

Consecutive	One-step	Two-step
a c e	a e l	a g n
c e g	c g l	c i p
e g i	e i n	
g i l	g l p	
i l n		
l n p		

Harmonies may be formed by taking consecutive grays four, five, six, seven, and eight at a time. This would give a matrix of five consecutive groups taken four at a time, followed by two one-step groups; four consecutive groups taken five at a time; three groups taken six at a time; two groups taken seven at a time; and one group using all eight at a time.

Since any group of three colors may be arranged in six different ways, in general, any group of (n) colors may be arranged in (n)† factorial ways. This gives for the major group 12 (3 at a time), 7 (4 at a time), 4 (5 at a time), 3 (6 at a time), 2 (7 at a time), and 1 (8 at a time), or a total of 26 groups. Each of these arrangements of any one group taken factorially forms a new harmony; hence there results:

$3! \times 12 = 72$, $4! \times 7 = 168$, $5! \times 4 = 480$, $6! \times 3 = 2160$, $7! \times 2 = 10{,}080$, $8! \times 1 = 40{,}320$, or a total of 53,280 possible standardized gray harmonies.

Monochromatic Harmonies. Selecting any hue of the twenty-four standardized chromatic colors gives a triangle possessing twenty-eight different colors of that hue. The harmonies that may be produced fall on lines parallel to the three sides of the triangle—this gives three minor groups called isochromes, isotints, and isotones as previously defined. By the procedure given for the achromatic series, these colors may be grouped in series starting with a minimum of three colors at a time consecutively, one-step, and two-step.

Isochromes. The isochromes, taken parallel to the gray axis, give consecutive, one-step, and two-step harmony groups for each degree of purity from two to ten. On the basis of taking only three colors at a time, there are produced twenty-two groups each of which may be arranged in six different ways giving, for the twenty-four triangles, 3168 harmonies.

Taking the colors four at a time, there results eleven groups, each of which may be arranged in twenty-four ways (4!) giving 6336 harmonies.

Five colors taken at a time produce six groups each with 120 forms, giving $6 \times 120 \times 24 = 17{,}280$ harmonies. Grouping six colors at a time produces three sets each arranged in 720 ways, or $3 \times 720 \times 24 = 51{,}840$. Finally a group taken seven at a time gives $1 \times 5040 \times 24 = 120{,}960$ harmonies. This gives a total of 199,584 isochromes for the whole color solid.

Isotints. The isotints running parallel to the (CB) side of the triangle have no degrees of purity but form major groups by the letter of the gray in which they end, giving the P N L I G groups. These harmonies develop in the same manner as the preceding group and give a total of 199,584.

Isotones. Similarly, the isotones running parallel to the (CW) side of the triangle form five major groups, A C E G I, giving likewise a total of 199,584 harmonies.

Isovalent Harmonies. As previously explained, by rotating a monochromatic triangle, each of the twenty-eight color points describes a circle passing through the twenty-four chromatic hues. The harmonies produced on these circles divide into four minor classes; complete isovalents, incomplete, subdominant, and split harmonies.

Complete Isovalents. This group comprises only the factors of twenty-four, namely dyads, triads, quadrads, sextads, octads, and duodecads. Theoretically there is no such thing as a dyad since a minimum of three colors forms a harmony, but a gray taken from the letters making up the given color circle must be used with the two chromatic complementary colors. For example, the complementary dyad, 8 red and 20 green, on the color circle (gc) would give three sub groups—two triads 8(gc), 20(gc), plus the (g) gray; 8(gc), 20(gc), plus the (C) gray; or a quadrad 8(gc), 20(gc), plus both the (g) and (c) grays.

With the six forms for each triad and twenty-four forms for the quadrad, 42 harmonies will be produced on this one dyad. Since there will be twelve dyads per circle and twenty-eight circles, a total of 336×42 or 14,112 harmonies is possible. Similar procedure for the complete triads gives 8 per circle or 224 for the 28 circles each having six forms. The remaining complete isovalents are easily calculated by taking each group with (n)! factorial forms.

Incomplete Isovalents. When one color at a time is omitted from any complete harmony there results a beautiful group of harmonies known as incomplete isovalents. There will be as many incomplete major groups as indicated by the name of the original complete groups; hence there will be three incomplete triadic dyads, while a sextad will produce six incomplete sextadic quintads, etc. Each of the harmonies is named by the position omitted relative to the prime color. This gives an enormous number of total possible harmonies for this class.

Subdominant. When more than one color of a given complete harmony is omitted at a time, a subdominant harmony is produced. Subdominant groups therefore can begin only with complete quadrads. The number of possible major groups produced from a given complete harmony equals the given harmony minus three. Any of the harmonies higher than sextads should be used with caution.

Split Harmonies. Any one color of a particular isovalent harmony may be split by taking colors to the right and left of a selected position at equal intervals, and then either retaining the color split or rejecting it. If the color split is retained, the harmony is known as a closed split, while if it is rejected, it is known as an open split. The colors may be split in succession in a clockwise cycle until all the colors of the given harmony become split, known as a complete split. All color splitting must be done symmetrically.

Split harmonies are very effective for patterns and designs in which glossy stripes or other parts are to be enhanced. The possible harmonies for this group are enormous.

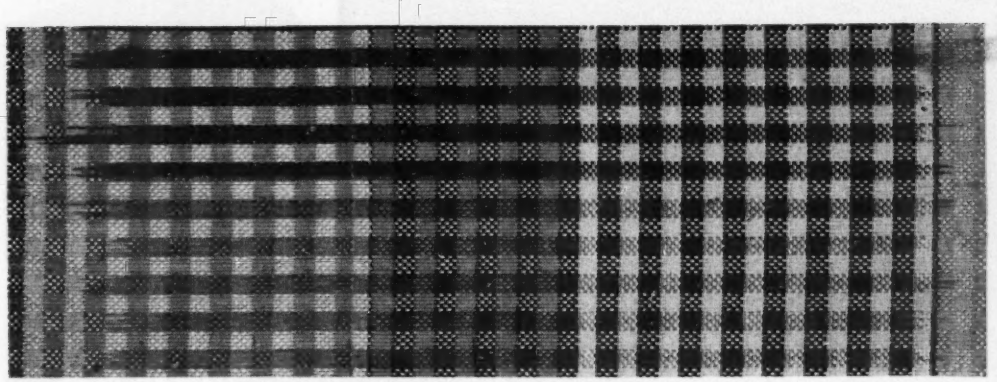
Associated Harmonies. This group involves the combining of any isovalent harmony with an achromatic series, or a monochromatic harmony with an achromatic. This was illustrated in the case of the complementary dyads.

Augmented Harmonies. Combining any isovalent harmony with a monochromatic isotone, isotint, or isotone produces an augmented harmony.

Ring-Star Harmonies. This group forms the most complex type of harmony since it combines any isovalent harmony with a total monochromatic; the isochromes plus the isotints plus the isotones based upon the given prime color. All Ring-Star Harmonies are used with caution since they involve many colors per group.

From this survey of the formation and classification of color harmonies, a little consideration of the logical development, the ease by which each color or its variation may be symbolized to express its complete history and properties, the enormous number of possible harmonious arrangements of color made easily available for application in design for any field of endeavor, the technological methods applied for insuring ease and exactness in duplication and reproduction of any given standardized color or its variation—these attributes and many more speak for themselves and should be an incentive for adopting a means toward a universal language of lighting and color.

† *symbol means factorial.*



CERTAIN WARP YARNS (horizontal) in this fabric sample were painted by the method described in this article. Note extent of painted area at extreme left and right. All warp threads were originally dyed gray. Every other 15 ends in the upper portion of sample were later stained at the loom with red dye; in lower half every other 15 ends were stained green. Filling at left is alternately blue and yellow; center, red and yellow; right, green and red. This is typical of the numerous fabric designs that can be developed in the weave room.

Practical Designing at the Loom

This winning entry in one of TI's "Kink Contests" gives a simple and inexpensive method for working out fabric designs on looms in the weave room.

EXCLUSIVE

By V. DUXBURY

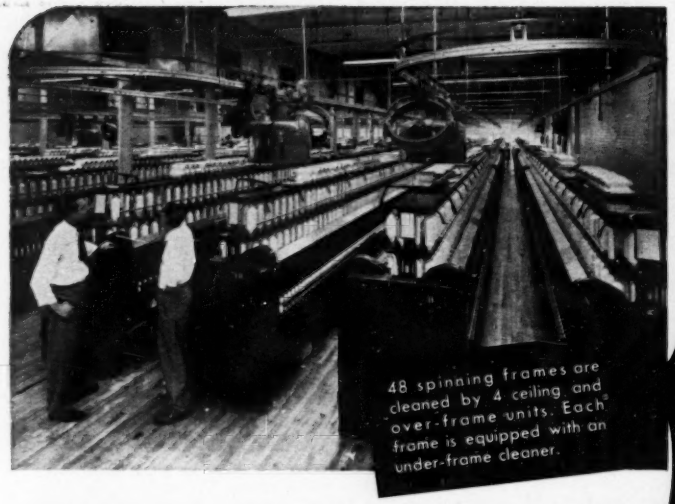
WHEN WORKING out designs for woven fabrics, it is often inconvenient and costly to prepare special warps for the various combinations of colors and weaves. In addition, the range of such colors is limited, and the patterns are confined by the lack of variety in coloring.

A method of increasing the designer's scope consists of using a plain undyed warp in a loom equipped with either a cam, dobby, or Jacquard shedding motion. The various warp ends are lifted according to whatever pattern of coloring the designer requires (subject to the limitations of the shedding mechanism), and the various ends are stained by the application of a simple dyestuff in whatever colors are required.

As an example, assume an undyed warp of either cotton, wool, rayon, etc., in a sample loom (hand or power) with a 16-harness dobby, ends drawn straight 1 to 16. The designer wishes to try out certain weaves with his warp in groups of 4 ends red and 4 ends black alternating throughout the cloth. He must first (for example) peg a dobby lag so that jacks 1, 2, 3, 4 and 9, 10, 11, 12 are raised, with jacks 5, 6, 7, 8 and 13, 14, 15, 16 left down. A shed is formed by turning the loom over, and a sheet of stiff paper is placed into the shed at the back of the loom between the whip-roll and the harness.

The raised warp threads are to be painted with a suitable red dye. A 1-inch wide paint brush can be used, taking care to paint the entire surface of each thread. Alternatively, a short stick with the end wrapped in ordinary bleached calico is suitable for application. This is continued until all raised ends are stained red. Then the yarn must be dried. This is accomplished by means of a domestic hair-dryer blowing hot air onto the yarn while it is under tension, the individual ends being separated either by hand or by a comb.

Having dried the red ends, the paper is removed and a second lag is placed under the indicators, and jacks 5, 6, 7, 8 and 13, 14, 15, 16 are raised—1, 2, 3, 4 and 9, 10, 11, 12 being left down. The paper is



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ONE OVERHEAD CLEANER serves the four Roto-Corners. All cleaning units are expected to pay their cost in two or three years.

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Quality has been increased in cleaner yarn with a better appearance. Production is increased in the card room and the spinning room because machines do not have to be stopped for hand cleaning of the ceilings. American MonoRail Automatic Cleaners have virtually eliminated this time-consuming job.

Added to these are other advantages, such as smoother running work, cleaner rooms that improve employee morale, reduction of accidents, dead air pockets broken up, fire hazards reduced.

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again inserted between the sheds, the raised ends stained black and dried as before, the paper removed, and the warp ends brought level. The warp is drawn forward until the dyed ends are in the weaving position and whatever weave the designer wishes to try out in conjunction with his various fillings, can be produced by suitable arrangement of pattern chains.

If the designer does not require a full width pattern, then two or more various color combinations can be tried out in the width. The only limitation is the color of the dyes at the disposal of the designer.

If the loom is equipped with a cam type shedding motion for two and two twill, the ends can be dyed singly, in pairs, or in groups of three by lifting the appropriate harnesses. If combinations of color are required which cannot be arranged so simply, then it is necessary to pick out the required ends and insert a rod to lift the ends to the required pattern.

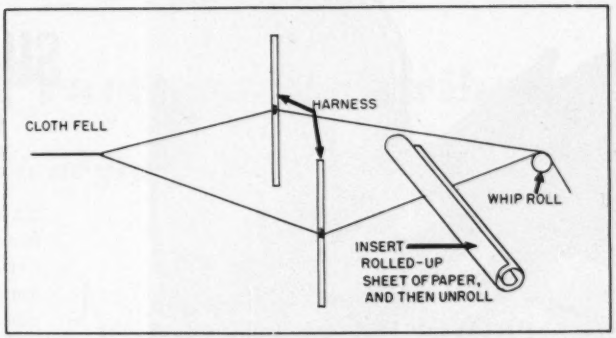
On a Jacquard machine, it is necessary only to cut one card for each color to be applied in order to lift any end or group of ends in the repeat of the tie-up.

A sample loom is desirable, but if this is not available, pattern layouts can be tried on any loom with a suitable warp at the end of the beam just prior to putting in the new warp.

A satisfactory preparation for a cotton warp has been found to be:

per 1000 parts	weight
10	Acid dyestuff
840	Soft water
100	Resin Binder
50	Softener
1000	

Brush or wipe on the warp ends, and then let them dry.



A SHEET OF PAPER is placed into the shed formed by the warp threads; then the paper is unrolled to protect the bottom threads while the top threads are painted with dye.

Lubrication of Full-Fashioned and Other Knitting Machines*

Lubricants should not be bought on the strength of specifications alone, but also on the integrity and reputation of the supplier from whom they are purchased. Nor should it be necessary for the average knitting mill to stock more than two grades of machine oil and one grease in addition to a compounded or highly refined straight mineral oil for use on parts that come in contact with the fabric.

Generally speaking, knitting machinery of all types can be properly and economically lubricated by the use of four grades of lubricants:

1. Stainless Oil (compounded to provide ease in removal from fabric, commonly known as "Needle Oil," and used for lubrication of parts in contact with or close to the fabric. Its viscosity may be anywhere from 70 to 125 seconds Saybolt Universal at 100 degrees F). A highly refined straight mineral oil with the same viscosity range can be used. Where it is used, however, the color should not be darker than 1.5 max. (N.P.A.), to insure the prevention of goods spoilage.

2. A high grade light machine oil having a viscosity of from 180 to 305 seconds Saybolt Universal at 100 degrees F. For general lubrication, including cam mechanisms, bearings, spindles, jack-beds, and other parts normally lubricated through open oil holes.

3. A heavier grade of lubricating oil ranging in viscosity from 590 to 860 seconds Saybolt Universal at 100 degrees F. This is equivalent to an SAE 40 grade and is used for sight feed and wick type bearing oilers, as well as the Coulier gear and pinion on the full-fashioned knitting machine.

4. Either a semi-fluid lubricant consisting of 96% highly refined petroleum lubricating oil at a viscosity of from 300 to 750 seconds Saybolt Universal at 100 degrees F., and 4% sodium base soap; or a pure grade of non-fibrous soda soap grease with a melting point of from 300 to 500 degrees F., and free from acid or alkali, for use in antifriction bearings and miscellaneous gears or other parts requiring a sliding action.

Full-Fashioned Machines. Main bearings are lubricated satisfactorily by the use of a highly refined straight mineral oil having a viscosity of from 180 to 305 seconds Saybolt Universal at 100 degrees F. It is

(*Continued on page* 201)

* Abstract of paper delivered at the national convention of American Society of Lubrication Engineers, April 1951, by F. K. FOGLEMAN, technical writer for Textile Machine Works, Reading, Pa.

SUNOTEX SLASHES SIZING COSTS

SIX YEARS AGO a New Hampshire mill used an emulsifiable oil, a penetrant, and a preservative in the softener for sizing viscose and acetate warps on Johnson slashers. The three size components were expensive, and either had to be dissolved separately or heated before mixing. Moreover, uniformity of the sized warp could not be counted on. A Sun representative suggested all three oils be replaced with "Job Proved" Sunotex RSO-48. Result: an immediate 25 percent reduction in formula costs alone, *plus* new ease in mixing and dependable sizing.

CURRENT PRODUCTION is marquisette for curtains, taffeta for women's wear. Fortisan and Nylon warps, too, have been sized with Sunotex RSO-48—with equally good results.

SUNOTEX RSO-48 SPEEDS WEAVING by protecting ends from breakage by shuttles and preventing build-up of static electricity. It boosts quality by reducing "snowballing" of filaments.

THE MILL CREDITS SUNOTEX RSO-48 for much of its reputation for product quality. In finishing, it scours readily and uniformly from fabric, gives even dyeing—makes production better right down the line.

Sun has the right "Job Proved" textile-process aid for every material, every operation.
For the help of a Sun technical representative, call or write the nearest Sun Office.

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by Georgia Mill Men

*Staff Report**

High Draft Spinning. Experience was limited with high draft spinning changeover, using the newly designed cradle. One frame equipped with these cradles was used to make comparison tests. Three-fourths of the frame operated with the new cradles, and the regular staple cradles were left on one-fourth of the frame. Processes in the card room included: cards, breaker drawing, finisher drawing, and Interdraft slubbers. Total doublings, 36; 57-grain card sliver, 60-grain drawing sliver; .90-hank roving; spinning 22s yarn from single roving, and drafting 24.4.

Comparison tests of yarn made on the test frame showed an increase of 3.7 per cent in break factor and 9.7 per cent decrease in variation, using the new type cradles.

Underframe Cleaners. An explanation of the merits of underframe cleaners stated that six were in operation on warp frames for nearly a year in one mill. These frames averaged about 25 per cent less ends down. The traveler changing schedule remained the same; however the travelers did not load up, and the changing schedule could be extended. The improvement in ends down was attributed to clean running travelers.

In this instance the cleaners are blown out every 24 hours; this amounts to approximately five minutes maintenance per cleaner per day. Frames without cleaners

*Continuation of report of spring meeting of Textile Operating Executives of Georgia. For discussion of card room practices, see page 157, May issue of TEXTILE INDUSTRIES.

"We are in an age of specialization. . . . " — Hardman

GUEST SPEAKER for the occasion was the president of the Cotton Manufacturers Association of Georgia, L. G. Hardman, Jr., member of a pioneer Georgia family and president of Harmony Grove Mills at Commerce, Ga. An abstract of his remarks is presented here:

We are in an age of specialization, which we all see, hear, and know about, and with which we are very familiar. We have trained a man to be a carder, and a carder only; or a spinner, or a weaver, etc. He is familiar with production and operation of the various component parts of producing textiles, but he has a limited overall operating experience.

We in the textile industry should train more men who could efficiently manage and produce as head of any department.

Many employees think of the company in terms of their supervisor's personality, approach, mannerisms, habits, tone of voice, and how he expresses his thoughts to them through the various supervisory personnel. As far as the employee is concerned, and because of the supervisor's close association with him, the supervisor is the top man in the organization, although there are officials of higher rank.

Mr. Hardman

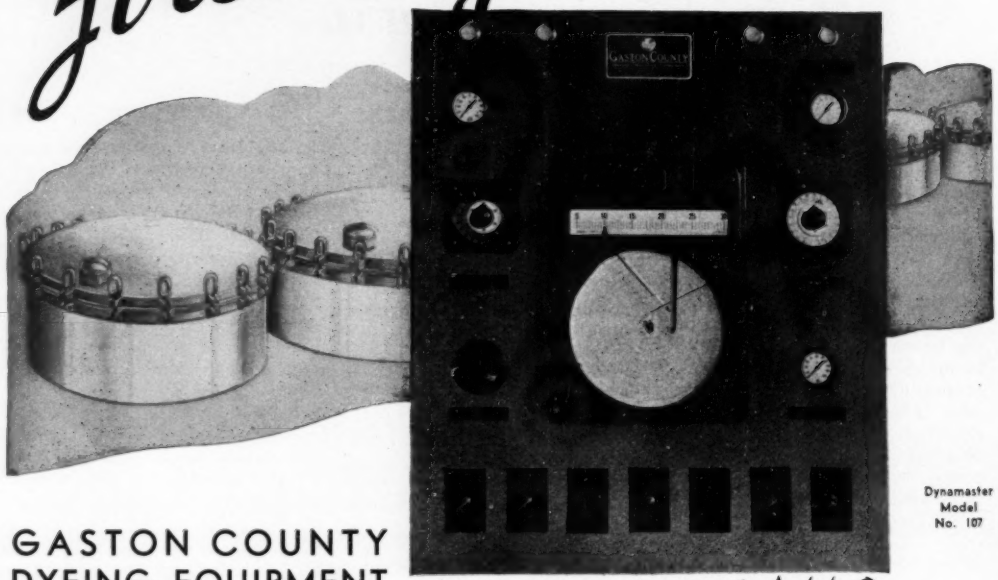
The operating executives of the textile industry are the key men to transmit, not only to the supervisory personnel but to each employee, an attitude of happiness, pleasantness, and one of satisfaction. We all make mistakes and have our faults, but a smile, a good morning, a pat on the back, or a constructive criticism and suggestions for that individual employee will improve production, increase efficiency, give each individual more satisfaction, improve the individual employee's job, and bind a closer relationship between the employer and the actual producer of the product; a relationship which we all want.

The average individual works for security so that he will not be dependent upon anyone in his old age. This individual is also interested in advancement. He wants to continue to grow and develop and reach up as far as his ability will permit him. He wants a clean plant; good working conditions; good equipment. He wants a sense of personal importance, and he wants information about the company to come straight from the front office.

This same individual wants the supervisory personnel to be fair, helpful, competent, and above all, sincere in what is said and done. A fair and sympathetic hearing is desired when a problem is brought forth for help and guidance. Above all else the employee wants personal satisfaction.

None should take an indifferent attitude in expressing to the individual employees anything but happiness, satisfaction, and a full realization that each is doing his part well.

First Again!



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Model
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High-speed, electronic action of the DYNAMASTER now gives *greater* accuracy and *greater sensitivity* than have ever before been possible with any dyeing machinery.

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Be among the first to enjoy the advantages of electronic control in your plant. Plan to see it now. Write Gaston County Dyeing Machine Company for full information.

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Terminal Building, 68 Hudson St.
Hoboken, N. J., G. Lindner, Mgr.

The Rudel Machine Co., Ltd.
614 St. James St., W., Montreal
137 Wellington St., W., Toronto

are blown off every two hours. On frames equipped with the cleaner, the outside portion of the rail is wiped once in eight hours. Special warps run from yarn spun on frames with cleaner showed considerable less gouts in cloth than regular warps.

Automatic Builder Motions. Approximately twelve trial installations of mechanical and/or pneumatic builder motions produced satisfactory results. A majority of the installations were mechanical builders, and in only one instance was performance to no advantage. This mill is using mercury knock-off switches on regular builders and finds them satisfactory for their purposes.

Those reporting on the effects of the automatic builder motion upon the battery filler's job stated that filling batteries was made easier and faster in that the short butt end is broken on the quill; running end is pulled to nose of quill so it can be placed in one continuous motion. There is not as much yarn to unwind, and no bobbins are too full. There are no short doffs, and it is easier for the battery filler to find the end and unwrap the yarn. The battery filler's job in one instance was speeded by about 45 seconds per 100 bobbins on an average basis.

Statements at the meeting indicated that the bunch produced at the top of bobbins had proved to be no advantage to date. A slight increase in yardage per bobbin was noted, and the doffers don't like the automatic type builder quite as well as the regular equipment. Doffers find that it is somewhat more difficult to doff frames equipped with the automatic builder.

Metallized Top Rolls. Nine Georgia mills rework top rolls by metallizing; whereas none reported chrome plating in reworking the rolls. The cost of metallizing varied from 40 per cent to 80 per cent of the cost of new replacements. The oiling schedule for metallized rolls remained unchanged after reworking as noted in four reports; however two schedules called for less oiling on metallized rolls.

Georgia Mill Spinning Practices

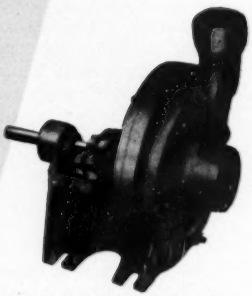
- **Automatic Builder Motions**
- **Metallized Top Rolls**
- **Ball Bearing Top Rolls**
- **Pneumatic Pickers for Rolls**

Ball Bearing Top Rolls. Six users of ball bearing top rolls listed advantages as follows: In one mill, 5 per cent less variation in yarn, 3 per cent increase in breaking strength, and 3 per cent reduction in ends down; another user reported 7 per cent decrease

DATA ON PNEUMATIC ROLL PICKERS

Mill No.	Frames per Air Outlet	Hose Length (feet)	Results
A	4	75	Good
B	30	100	Good
C	18	100	Good
E	12	75	Good
F	2	frame length	Good
G	8	50	Good
H	7	50	Good
I	84	131	Good
J	10	100	Good
K	12½	75	Good
L	48	60	Good
M	10	75	Good
N	12	100	Good
O	34	140	Good
P	16	100	Good
Q	2	75	Good
R	8	50	Good
S	4	50	Good
T	9	100	Good
V	8	50	Good
W	6	75	Good
X	—	100	Good
Y	12	100	Good
Z	4	50	Good
AA	13	75	Good
BB	12	—	Unsatisfactory
CC	4, 6, & 8	100	Good
DD	12	100	Good
EE	4	100	Good
FF	20	100	Good
GG	16	frame plus alley	Good
HH	10	50	Good
II	8	75	Good

It's easy to get the right pump!

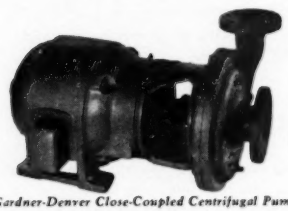


Gardner-Denver Side-Suction Centrifugal Pump

Call your Gardner-Denver field engineer. He'll gladly work with you in planning the most economical and efficient pumping layout. And he's an expert at specifying the *correct* pump for every installation.

He may recommend the compact Gardner-Denver Close-Coupled Centrifugal, which may be installed in many positions—or the easy-to-hook-up Gardner-Denver Side-Suction Centrifugal—or the heavy-duty Gardner-Denver Double-Suction Centrifugal. All Gardner-Denver pumps are built in a wide range of capacities—can be furnished in corrosion or abrasion resisting materials when required.

Write us today for complete information. Ask for the name and address of the Gardner-Denver pumping engineer nearest your plant.



Gardner-Denver Close-Coupled Centrifugal Pump

Gardner-Denver Double-Suction Centrifugal Pump

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THE QUALITY LEADER IN PUMPS, COMPRESSORS AND ROCK DRILLS

Gardner-Denver Company, Quincy, Illinois

In Canada: Gardner-Denver Company (Canada) Ltd., Toronto, Ontario

Atlanta, Ga.; Birmingham, Ala.; Knoxville, Tenn.; Washington, D. C.; New York, N. Y.; Philadelphia, Pa.; Pittsburgh, Pa.; New Orleans, La.

in ends down. Other advantages claimed were: Less oily yarn, better uniformity, and less oiling required. One experience showed that the ball bearing rolls were good when new, but after the rolls were buffed results were unsatisfactory.

Rolls equipped with needle bearings produced less ends down and better quality than conventional rolls.

Georgia Mill Spinning Practices

- ✶ Nylon Saddles and Cap Bars
- ✶ Plumbing Rubber-Mounted Spindles
- ✶ Increasing Warp Bobbin Size
- ✶ Brushes on B-C Spoolers
- ✶ Cleaning B-C Warpers
- ✶ Reducing "Wild Yarn" on B-C Spoolers

Nylon Top Saddles. Two of those using nylon top saddles found that less oily yarn was evident and less oiling was required; whereas one user found the rolls about the same as regular equipment, and three found nylon saddles unsatisfactory.

Nylon Top Roll Cap Bars. Six per cent increase in yarn strength, four per cent less ends down, and less oiling were claimed for nylon cap bars in one report; satisfactory service was obtained in another, provided they were oiled once per month. Performance of nylon was the same as regular cap bars, according to one statement, and in three instances nylon cap bars were found unsatisfactory because of excessive wear or breaks in the blocks.

Plumbing Rubber-Mounted Spindles. Trouble was experienced keeping rubber-mounted anti-friction spindles plumbed. Suggestions to remedy the trouble were: Use new rubber washers each time the spindles are plumbed; let the spindles settle after the initial installation; then re-plumb, and while plumbing, the spindle should have a close setting to outside of ring so when tape is put on it will pull spindle to correct plumb.

A speaker at the meeting said that 12-inch bobbins running 8100 rpm with a ¾-lb package should give no trouble if set to standard torque of 12 lb. If 12 lb torque is exceeded, vibration will occur.

Another speaker stated that the manufacturer is making a new part to go on the spindle to prevent the trouble. A few have been installed, but it is too early to determine the results.

Increasing Warp Bobbin Size. In changing to larger bobbins on warp spinning, five mills utilized the same spindles which were used before the change was made. Three of these mills changed from 9¼-inch to 1¼-inch bobbins; one changed to 9¼-inch from 8¼-inch bobbins without a change in spindle size; one changed from 8-inch to 9¼-inch bobbins on the same spindles; and one had to use heavier spindles to increase the bobbin size from 8 inches to 9½ inches. Yarn numbers ranged from 14s to 21s; the only ring sizes mentioned were 2¼ and 2½ inches, and ends down per thousand spindle hours varied from 25 to 50. It was generally agreed that 10¼-inch bobbins are maximum length for satisfactory use on B-C spoolers.

Brushes on B-C Spoolers. Ten replies favored using brushes as a means to reduce wild yarn on Barber-Colman spoolers, and four mills claimed more wild yarn was caused by using brushes on spooler drums. Methods used to reduce wild yarn at spoolers may be found in accompanying box.

Cleaning B-C Warpers. To help prevent wild yarn on high speed warpers, one written answer suggested the following: (1) Blow off creels after each creel runs out. (2) Have air suction over warper head and under creel for removing fly, trash, and wild yarn. (3) Piece up end when wild yarn collects on expansion comb. (4) Clean chain and sprocket gears in creel weekly. (5) Put waste in waste box after piecing up ends. (6) Caution operators not to lean on beams (prevents wild yarn transferring to beam from operator's clothing). (7) Have air pipe automatically blow out each bucket as creel is changed.

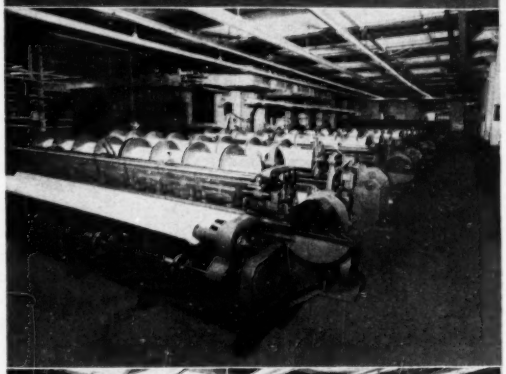
In one mill partitions were built half way down from the ceiling to separate the individual warpers. Curtains are hung from the partition to the floor and are closed after each creel while the warper is blown off. In front of each

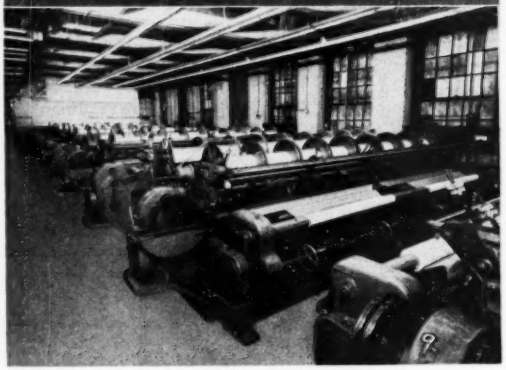
WAYS TO REDUCE "WILD YARN" ON B-C SPOOLERS

1. Use correct build on warp wind bobbins.
2. Use correct lay of yarn on bobbins.
3. Do a more thorough job of cleaning the machine.
4. Attach fan to front of traveler to blow out pockets.
5. Clean the tension and thread holder each time traveler goes around.
6. Set snick plates properly.
7. Break off tails close to thread clamps.
8. Have spooler tender place broken pieces of yarn in receptacle.
9. Remove burrs from cheese plough.
10. Keep good clean rotary brushes on traveler.
11. Keep thread clamps clean and in good condition.
12. Be certain shearers operate properly.
13. Use stationary brush against drum.
14. Wipe excess oil from station near rise roll.
15. Train spooler tenders properly.
16. Install suction cleaner on traveler to pick up wild piece after knot is made.
17. Equip thread holders with blade so the tender can cut the end of each yarn package as it is creeled.
18. Check knotter settings once per week.
19. Check rise roll and pressure lever settings.
20. Adjust vacuum by regulating relief valve.
21. Use bat wiring thread guide.

Meinig's
3 TRICOT SECTIONS

100% REINER EQUIPPED





Fabric Quality begins with the machines producing it. Nobody is more fully aware of this fact than the management of the E. Richard Meinig Co., pioneers in the warp knit field since 1905. They have earned a fine reputation as producers of quality tricot and simplex goods—and so have Robert Reiner, Inc., as manufacturers of Tricot, Simplex and Raschel Machines, also Warpers and Creels—in short, a complete line of warp knit mill equipment.

We are proud of this all-Reiner Tricot installation at the Meinig mills. They include 2 and 3 bar machines—economic, versatile and fast producers with an unlimited pattern range.

The market for warp knit fabrics is steadily expanding. New fibres are ready to serve new needs and new markets. Be sure to benefit from this profitable trend by installing machines of mill-proven excellence and top quality production —tricot machines made famous by Reiner.

Available: 2 and 3 bar machines, with 2 bar machines convertible to 3 bar use and vice-versa — long needles for coarse gauge fabrics—knitting widths 168" and 84"—all gauges — automatic oil feed lines throughout — pattern wheel or chain link drive—positive cloth take-up—and other features.

A richly illustrated catalog is yours for the asking.

The Reiner Line Includes:

Simplex (Double Knit) Machines—Kayloom Machines—Raschel Machines—Full Width and Sectional Warpers—All types of Creels—Four Section Full-Fashioned Hosiery Machines (up to 66 gg.)—Automatic Schiffli Embroidery Machines (10 and 15 yards)—Bobbin Winding Machines (for Stitching and Quilting)—Ready Spare Part Service for all Reiner Machines.

FOUNDED IN 1903

ROBERT REINER INC.

550-564 GREGORY AVENUE
WEEHAWKEN, NEW JERSEY

10 MINUTES FROM TIMES SQUARE. Take Bus Nos. 61 or 67, from Platform No. 60, Port Authority Bus Terminal, 41st Street and 8th Avenue, New York City. Get off at Pleasant Avenue, Weehawken, New Jersey. From there turn left and walk through the underpass up to Gregory Avenue . . . TELEPHONE UNION 7-0502, 0503, 0504, and 0505. From New York City call LONGACRE 4-6882

warper a 16-inch fan blows down into the comb and creel, blowing loose lint and wild yarn down and out of the warp.

Controlling Weights. The final question presented for discussion asked for a detailed description of methods employed in controlling sliver, roving, and yarn weights. Several comprehensive answers are as follows:

Mill A. All sizing is done by laboratory personnel. For each count or type of production the size results are brought together daily on the roving, yarn, beam, and fabric weights, by the technical department, and all gear changes originate at this point.

All control is considered in reverse. The finished product determines the size of roving and yarn at all times. Yarn or roving must be within plus or minus two per cent, or if three-day run of one per cent plus or minus, a change is considered in order. If warper beams average in weight more than one per cent off on full day's run, a change is in order. Size changes are usually made on the crown gear of fly frames.

Size regulations begin with weighing laps on scales adjusted for moisture conditions; tolerance 1.25 per cent. An occasional check is made on card sliver and drawing to keep weight near standard.

Daily control starts with fly frames. Roving is sized daily by sampling four frames of five bobbins per frame. All yarns in production are sized daily, and samples are taken from five frames, two bobbins per frame. Moisture content is considered.

Warped beams are considered of primary importance in control of size. Moisture is accounted for, and scales and tare weights are calibrated. Ply yarn sizes are checked daily. Square yard weights are calculated on woven fabrics from the net weights of finished roll.

Mill E. We control our sliver, roving, and yarn weights by sizing them once each day and endeavor to keep variations of plus or minus, less than two per cent. All of the weighing is done by a special operator, and results are posted on special forms made for this purpose. Copies of these weights are sent to the overseer of the department involved, to the production department, and the assistant superintendent each day. When changes are necessary, the overseeer, assistant superintendent, and production supervisor make the decision.

Mill H. Sliver is weighed periodically, and roving and yarn weights are checked daily and more often if necessary. As further control, we endeavor to arrange section beams so that their weights average to give the proper weight warp beam. Variation on roving and yarn is held to less than two per cent of the weight of the counts.

Mill N. Card sliver is controlled by picker lap weights. Drawing sliver is controlled by changing draft gears. We accept a variation of three per cent at first and second drawing, two per cent at slubbers, two per cent at spinning. If weights go above or below this we make a change.

Z. BOYCE MANGUM, Sibley Division, Graniteville Co., Augusta, Ga., presided over the spinning and warp preparation forum.

M.I.T. Summer Course on Textile Research

Designed to review recent developments in methods and equipment, a special course in the principles of textile research will be included in summer session 1951 activities at the Massachusetts Institute of Technology, from July 2 to 27.

The four-week course will be given under the direction of Professor Edward R. Schwarz, who is in charge of the textile division in the M.I.T. department of mechanical engineering. Its emphasis will be on the functioning of a textile research laboratory in connection with quality control programs, new product development, instrumentation, processing, and the field of education at college and university level.

The theory and applications of feedback control systems (servomechanisms), and the broad concept of "system engineering," will be the subject of another special summer course from August 20 to 31.

Industrial applications of feedback control systems in such fields as textile manufacturing, chemical processing, and power distribution will be discussed.

Further information on these courses may be obtained from Professor W. H. Gale, director of the summer session, at Room 3-107, Massachusetts Institute of Technology, Cambridge 39.

The Yarn can't jump out...

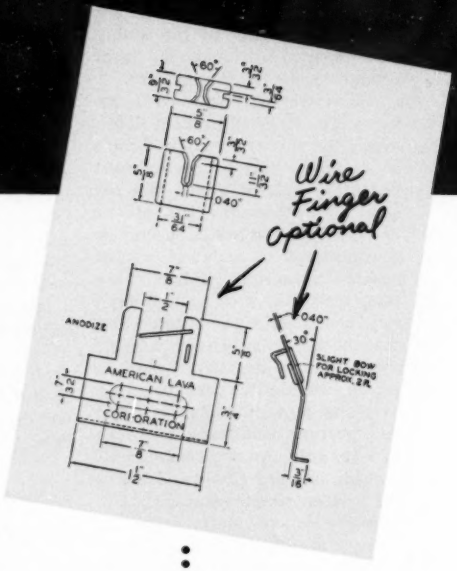
IMPROVED

ALSIMAG

U. S. PATENT NO. 2,214,703 AND OTHER CLAIMS PENDING

WINDER AND REDRAW GUIDES

(PATENTED)



These AlSiMag guides are lowest in cost per pound of yarn processed. Mills all over the country have been running them for more than two years. In most mills the guides do not yet show any signs of wear. In every instance these AlSiMag guides have outlasted the best former guides by several times. One mill which had to replace their former guides every two weeks has now run these AlSiMag guides more than two years with no sign of wear.

This AlSiMag guide and holder is now offered with special, corrosion resistant wire finger attached (as optional equipment) to prevent yarn from jumping out. This means higher speed production.

This new AlSiMag guide is offered as a guide alone or as a guide with holder. The holder is anodized aluminum with wire finger attached. It is easily mounted on the frames of Monarch, Sipp-Eastwood or Atwood Winder, Spinner and Redraw machines. Oblong screw slot permits ready adjustment and positioning.

The AlSiMag guide slips into curved fingers of the holder. These fingers are curved or bowed slightly to form a spring tension on the slots on the outer sides of the inserted guides. A special, corrosion resistant wire finger keeps the yarn from jumping out. The guide may be pulled out for cleaning and slipped back into position easily, and the holder may also be removed easily for cleaning.

The AlSiMag Winder and Redraw Guide is made in three different materials:

ALSIMAG 192 (considered standard) A non-conductor of electricity. Hardness of 8 on Mohs' scale. Gives exceptionally long life on most requirements. Ivory color.

ALSIMAG 193 A conductor of electricity, used for dissipating static charges. Metallic gray color. Otherwise it is identical to AlSiMag 192.

ALSIMAG 491 Super hard, highly resistant to cracking, chipping. Great mechanical strength. Hardness of 9 on Mohs' scale. Its cost is justified where excessive wear is experienced or where satin finish must be maintained under severe conditions. Light blue color.

Guides in any of these materials are available in either High Polish or Satin Finish

ASK FOR FREE SAMPLES

Test these AlSiMag Guides in your mill! Let them tell the story. You'll find they give you:

1. Far longer wear.
2. Uninterrupted production.
3. Better quality yarn.
4. Higher speed.
5. The lowest cost per pound of yarn processed.

(One mill reported that with these AlSiMag guides his cost was 1/20th of former guide costs!) Write for your free test samples and let them prove it!

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Installing Electrical Equipment

and maintaining it

By L. J. MARBURGER*
Berkshire Knitting Mills
Reading, Pa.

EXPERIENCE at Berkshire Knitting Mills where over 600 full-fashioned stocking knitting machines are in operation, indicates that the following is good electrical installation and maintenance procedure for these machines:

Copper in the supply lines must be generous — the calculations should not be based simply on the horsepower of the drive.

Reason: With inching control conditions and with braking of modern high-speed, massive, longer machines coupled with poor voltage regulation due to the inability of utilities to catch up with the demand for power, electronic tube life may be seriously shortened. Over-voltage on a lamp or tube filament ruins them, while thyratrons and other type gas rectifiers may be damaged if the filament is operated under-voltage. (An average of 144 pulses or starts per hour on hosiery machines exists at Berkshire.)

Ground connections from frame of machine to building structure are essential.

Reason: Close spacing of machines increases probability of operatives contacting two machines simultaneously, setting up conditions for dangerous electric shock.

Electronic panels should be dampened when installed, rather than waiting for signs of vibration and then remounting all the panels.

Reason: Since electronic means of propulsion and/or control of full-fashioned knitting machines is the trend, vibration of machines and building is becoming a problem, especially from the standpoint of the tube element which is sensitive to vibration. Late model machines run at higher speeds; moving parts are of greater mass—vibration experienced is correspondingly greater. Because of the larger machines, synchronization (harmonic vibration) may create an amplitude of vibration never before experienced, particularly in multi-storied buildings.

Sections of circuits should be segregated to facilitate trouble-shooting. Sets of fuses or circuit breakers could be added to each part so that with a ground or short circuit, the blown fuse or tripped breaker would indicate where to start the search.

Reason: Berkshire has several hundred electronic drives in which a rectifier is used to supply three distinct circuits: (a) the motor shunt field; (b) the control circuit on the machine consisting of limit switches, push button station, etc.; (c) the electronic control panel. A circuit breaker was installed to feed the control circuits, and a fuse was cut in the electronic panel feed. The motor shunt field circuit went unchanged. The arrangement proved satisfactory.

Overload, short circuit, and other devices intended to protect motors and equipment against single phasing are not true protective devices if they require maintenance. Protective devices requiring maintenance to prevent premature or useless tripping can be depended upon to save equipment. Devices that trip without reason, and can't be repaired, should be replaced.

Reason: The motor can be removed from the line in time to save its windings. There are several thousand motors operating at Berkshire. Roasted windings due to overloading or single phasing are practically non-existent.

Routine maintenance is justified. The plant should be run on the assumption that no trouble call is ever justified, admitting the probability of human error. A filing system is kept with daily entries of every service call made, the difficulty experienced, and what was done to eliminate it. One card is used for each machine.

Reason: Berkshire is operating around the clock, averaging about ten calls per day despite the more complicated equipment to be maintained. Before the preventive maintenance system was put into practice, 35 trouble calls per 10-hour day were received. Frequently, search of the filing system reveals a tendency toward a condition which really originates with the manufacturer of the drive. In such cases, the drive is fully examined and sometimes a remedy is found. Having a large number of the same type of drives has advantages since changes can be made to a large group, and observations

*Highlights of paper presented at a special technical conference held by American Institute of Electrical Engineers, Philadelphia, Pa., April 23.

Cocker

1st's

on slashers

The following improvements were first introduced on Cocker Slashers:

Individual Traps on each Cylinder

Rotary Packless Joints

Flexible Metal Hose Connections

Stainless Steel Cylinders

Variable Speed D.C. Drive

Large Jacketed Stainless Steel Size Box with Large Diameter Stainless Steel Quetch Rolls

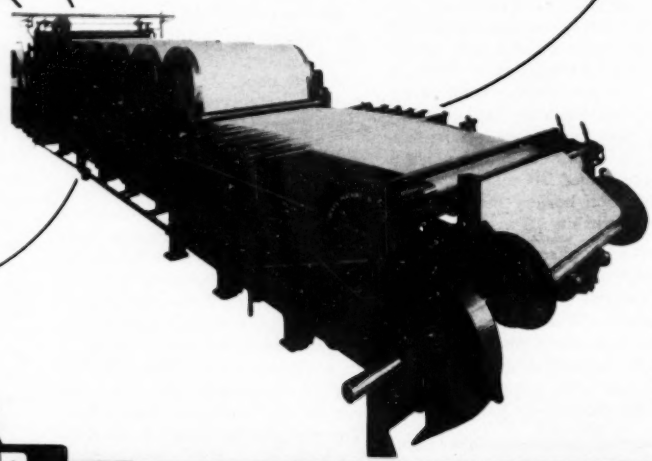
Cut Sproket Roller Chain Drive

First and only ones now using **Differential Friction Compensating Control, permitting High Speeds without heating of Friction**

Now first again with **New Type Friction permitting the putting of 20% to 25% more yarn on loom beam**

Cocker Slashers for Cotton, Rayon, Spuns, and all other type yarns have always been the most modern and efficient. It will pay you to investigate all the Cocker features.

For Cotton Rayon Spuns and other Type Yarns



THE LEADER COCKER AROUND THE WORLD

Machine and Foundry Co., Gastonia, N. C.

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and results can be obtained in a short time.

Ordinary dust, carbon residue where brushes are used, and oil are the major contaminants of hosiery motors. Motors are not removed for cleaning except when repairs are indicated. At this time a thorough cleaning, degreasing, and painting takes place, both on the windings and external frame surfaces. Motors are cleaned once a year. Compressed air and a compressed air high flash point naphtha spray are used at 80 psi. At this high pressure, cleaning is more efficient. Dry air is used. The air is forced through a ceramic filter dryer placed in the air line.

The cleaning procedure: Air is blown through motor to remove loose particles of foreign matter. A naphtha compressed air spray is then used to wash down oily matter. Dry air is again blown through to remove remaining naphtha. Stoddard solvent (the naphtha) is used rather than carbon tetrachloride or other chlorine compounds to guard against explosion hazard common to petroleum products. Motor cleaning is done when the plant is shut down, usually during annual vacation period. Windows are opened for ventilation and elimination of explosion hazard. Machinery is at ambient temperature, so that evaporation of solvent is not so great as when cleaning warm motors. A fire extinguisher is carried by each cleaning crew.

Reason: Berkshire motors average eight years in service before a complete disassembly is necessary. Not one fire has ever resulted from this method of cleaning.

Every few years cartridge fuses are removed from blocks and switches. If they are renewable link type, they are reloaded, polished, and reinstalled. Fuse clips are tightened if loose, replaced if burned, and polished with a special device developed at Berkshire. When a fuse is blown on three-phase equipment, all fuses on the same circuit are replaced.

Reason: Unblown fuses are subjected to a higher current than normal since the motor must operate single phase when only one fuse blows. Motors are well-loaded, and when operated single phase will draw higher than rated current through remaining fuses. A sequence of fuse blowing is started when only the blown fuse is replaced.

The 4000 electronic vacuum tubes in use at the Berkshire plant require precise vacuum tube checking. At periodic intervals, all tubes except thyratrons and voltage regulators are removed from panels, tested for emission, opens, and shorts. No test is made until tube is thoroughly heated. While testing, tubes are vibrated, since many intermittent faults would be missed otherwise. Good tubes are replaced. A group short circuit tester designed by Berkshire personnel is used. Twelve tubes are tested simultaneously.

Reason: Formerly, all tubes which passed a simple, short and emission test were returned to the panel. So-called good tubes developed a higher percentage of shorts than new tubes after being in use only a few hours. Heating the tubes and testing in a horizontal position increased the rejects. These methods are saving tubes, since at one time it was common practice to make complete tube replacement at periodic intervals. At the same time, the test method insures against return of a defective tube.

Periodic cleaning of the ventilating louvers of a thyratron rectifier panel is necessary. Do not drape stockings or other materials over grille openings.

Reason: Overheating must be prevented. Thyratrons operate within a definite temperature range. If operated too warm, tubes will flash back or backfire. Anode fuses will be blown out. Tube life is definitely shortened.

Sleeve bearings are practical where routine lubrication is the rule. Frequent lubrication is essential. Oil wells in sleeve bearings should be drained annually, flushed if dirty, fresh oil put in. In plants where oiling schedules are likely to be neglected, ball bearing motors are advisable. Over-lubrication is the major cause of ball bearing destruction. Ball bearing motors must contain relief openings to prevent excessive lubricant pressures. The choice of a proper lubricant is extremely important.

Reason: There were 518 ½ hp ball bearing blower motors operating in the boarding department, all subjected to high ambient temperatures. Oil separated out, leaving only the soap which hardened to abrasive consistency. In two years 500 bearings were replaced. The solution was found in a solidified type oil in which there were no soaps or other solids. More frequent lubrication was required since the oil could not be kept in the motors for long periods.

Loom Attachment for Dense Fabrics

The loom attachment for weaving fabrics of greater density, development of which was reported by Southern Regional Research Laboratory in 1949, has now been simplified and on the basis of service tests the new model is believed to be mechanically sound for industrial use. Fabrics woven on looms equipped with the device are said to be highly resistant to wind and water, making them specially desirable for use in the manufacture of outer garments, tentage, tarpaulins, etc.

Ozone for Bleaching

Ozone may now be safely manufactured, according to reports from Armour Research Foundation at the Illinois Institute of Technology. Since it has been found that ozone leaves no residue that decreases the strength of the bleached material, it is believed that U. S. mills may now consider its use. It has already been used in Europe on starches, oils, and paper pulp.

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DEAR JOHN:

Here is the report of TEXTILE INDUSTRIES' "foreign correspondent" on the International Textile Exposition, which is now in progress* at Lille, France. I am writing on the top floor of the Hotel Siru, over the square at Place Rogier, Brussels, so you'll excuse me if I stop to watch the bustle of bicycles and taxis below now and then, or the flower market women . . . the bells on the clock across the way which play a tiny tune every fifteen minutes, like some giant music box, always manage to bring a little smile inside to replace the warmth from the sun, which we haven't seen for a week.

First comes a few remarks about the exhibition itself, then about some of the general exhibits. Then, what was found to be of interest in the machinery exhibit, including the circular looms, the shuttleless looms, the ring spinning frame with gear drive (no tapes!), etc.

(In addition to giving the casual reader a casual idea of the show, we hope we can give prospective exhibitors or prospective visitors an idea of whether they should participate in or visit the next such Exposition.)

The officials of the International Textile Exposition say that this is the first of its kind. It seems strange that it has taken so long in a Europe which is so Exposition-conscious. To the people over here, these are big events every year, the great commercial and industrial Fairs at Brussels, Leipzig, Milan, and all over the continent. They have had many national Textile Expositions (here in Belgium usually in Ghent, the center of the Belgian textile industry . . . in England it is in Manchester, and so on). These often have a few foreign exhibitors, but this is the first one that has started out with the express intention of being international.

The Exposition is housed on a large Fair Ground in buildings built especially for the purpose. Exhibitors from 24 nations required an area of 17 acres for their exhibits. Just imagine the Greenville or Atlantic City shows multiplied by two or three for the machinery section. Then about the same amount of space is devoted to general exhibits of different kinds of fibers, of fabrics, synthetics, and so on.

Coverage and Sponsorship. The whole of the textile industry is covered, including clothing, dress design, the fabric and fur trades, textile chemicals and dyestuffs, control and research in textiles, as well as production machinery of all sorts from all the important manufacturers. At the half-way point, the exhibit seems to be a howling success, despite the lingering of the gloomy and chilly French winter.

The Exposition is sponsored by the French government, the O.E.E.C. (Organization for European Economic Co-operation . . . the offshoot of the Marshall Plan), the International Associations of Wool, Cotton, Silk, Linen and Hemp, Artificial Silk and Synthetic Fibers; and the European Association of Clothing. In short, it is a really big thing, and after seeing it, I am surprised there was not more publicity given to it in America.

In addition to the exhibits, there is a long list of official and professional events, including meetings of all the significant organizations in the textile field. The main exhibition building included an auditorium with seating capacity for 400, where movies could be shown, a banquet hall, and several meeting rooms for conferences and lectures. The various associations were assigned different days on the calendar of events—the nylon association, the clothing association, the cotton association, the hosiery group, and many others shared the space in their turn. The brand new International Congress of Research and Applied Science in the Textile Industry met for two days, and a number of papers were read on textile chemical subjects. This Congress is an overall grouping of many national organizations interested in this subject.

Movies and Horse Shows. For those who get leg-weary and have time to spread their visit out a bit, at the times when the auditorium was not being used for other purposes, they showed documentary films on textile subjects from many different countries. Most of these were in either English or French, and included subjects ranging from the manufacture of hemp, to the use of the stroboscope for studying textile machinery in operation.

EXCLUSIVE

Paul V. Seydel is known to readers of this magazine through his series of articles on "Cotton Warp Sizing," "Swiss Slashing Practices," "Compressive Shrinking," and others. His plans for this trip abroad called for visiting mills in France, Germany, Switzerland, and Italy, but he also attended the International Textile Exposition at Lille, France.

This letter was a personal one to TI's editor, but because Dr. Seydel has captured the spirit of the exposition as well as some of its highlights, this uncensored version is offered our readers. The author is vice-president and director of research, Seydel-Woolley & Co., Atlanta, Ga.

* *April 28-May 20.*

Also tied in with the Exposition were such miscellaneous items as a horse show, an automobile rally (ever hear of one?), a golf tournament, and several musical concerts, including such well-known musicians as Zino Francescati and Charles Munch.

Support and Facilities. Financially the Exposition is supported by both the exhibitors, who pay for space as in our show, and by the visitors who pay (150 francs, or about 43¢) to attend the show. For the benefit of the exhibitors who object to having customers pay to see their exhibit, exhibitors may buy entrance cards at the rate of 5 francs, or 1½¢, which they can pass out as we do admittance cards for the Greenville and Atlantic City shows.

From the point of view of the exhibitors, a lot of people are wandering around taking up space who are not actively interested in their particular machines. From that angle, the interest is not as concentrated as at our shows, because priests and policemen, schoolboys and show girls are milling around among the prospects. However, a lot of non-buyers get in our shows, too, and the exhibitors quickly learn to spot visitors with more than a general interest. Besides, I feel that any interest that can be built up in John Q. Public about any part of the textile industry is good for the industry as a whole. Probably after John Q. sees how complicated textile machinery is, and how expensive a mill installation can be, he will better appreciate the products he gets and the low prices he has to pay.

Other facilities of the Exposition include a large dining hall which serves lunch . . . unfortunately not the best French cooking, but still better than the equivalent would have been at home, and including good wines. Several bars are scattered about, to give one the strength to go on, after he has become weary. At the entrance, a counter was organized with miscellaneous services, including interpreters who could go around with you to help ask questions (pretty French girls, they were!), an off-shoot of the local bank, where you could change money, a travel service, information bureau, and a man who could find you bed and board in case you had not applied soon enough yourself.

The city of Lille itself is about the size of Greenville, or a little larger. It is the center of the French textile industry, along with the two neighboring towns of Tourcoing and Roubaix. The three are very close together and make up a total population of nearly half a million. Lille is about sixty miles from Brussels, about a hundred from Paris, and lies in a beautiful pasture country, with lush green growth in the surrounding fields. A nice place to look at after finishing the Exposition, it has the usual Cathedral, museum, town hall, and other items a few centuries old, which are interesting, but not outstanding examples of French architecture.

If you should come here first and want to see France after seeing the Exposition, it will certainly get you in the mood . . . it is French through and through, with its cobbled streets, its narrow old dirty row-houses, its sidewalk cafes (you cannot eat in a cafe, by the way . . . only drink . . . to eat you go to a restaurant). It is normally not a tourist town, and you can be sure that most of the folks you hear speaking English are visitors to the Exposition. The food is good in any restaurant, but for first-class food better try "A L'Huitriere" or your own hotel.

Sheep to Silks. Now to get down to the details of the exhibits. You can see anything that has anything to do with textiles, from rugs to ribbons, from sheep to silks, from cards to chemicals. I'll try to describe a few of the general exhibits.

In the big entrance hall, in addition to the various service desks, were exhibits of the various European textile periodicals. There must have been about a hundred different ones (we were disappointed in not seeing TEXTILE INDUSTRIES on the shelves, or any other American magazines). Around the hall on the walls were some modern tapestries. Just one word of description. Horrible.

Going in, we passed through a circular room done in black, exhibiting exquisite French laces from various parts of the country. (The white laces showed up beautifully against the black walls.) Some were laid out in small items, some long graceful drapes of lace, some formed into white lace swans.

Beyond this, in the center of the main building, is a high rotunda, occupied mostly by a shallow pool with a fountain in the center. Around the pool, four bosomy plaster sphinxes hold above their heads the ends of drapes coming down from the center of the thirty-foot ceiling.

The Fiber Theme. Each fiber has its display room around this rotunda . . . jute, silk, linen, cotton, rayon, etc. These general displays are organized by the Exposition itself, not by individual companies, in order to show the uses of the different fibers and samples of the goods made with them. A great deal of thought and imagination have made the exhibits very attractive . . . for instance, the jute room was lined with burlap, arches in the walls made to resemble stones by having folded bags tacked to the arch to give stone-like design. On a large burlap-covered pedestal in the center was a ten foot figure of a warrior, all made from jute . . . the body and skirt from heavy rope, rope-coiled breast plates, and limbs and head from various sized balls of heavy wrapping twine. The whole room had the feeling of simplicity and great strength, plus the wonderful odor of jute fibers.

Anything like a reasonable description of all the interesting exhibits would require a young book . . . for they were all so well-thought out and attractive. The dressmaker's room showed a sort of surrealistic tableau of some ethereal female form in the center, with a lot of other forms hovering around, some measuring, some trying things on her, some floating through the air with new fabrics for appraisal.

There was a room in which five famous French paintings had been reproduced to show the effect of textiles on art . . . the most beautiful to me being that of the Cardinal de Richelieu in a bright flowing robe of crimson. There were rooms with costumed dummies to show the clothing worn at different periods in the past few centuries, and the furniture that went with it. A life-size model of the prow of a ship was set up, with fifteen or twenty mannequins wearing modern sports clothes all over the deck.

Chemical Exhibitors. The textile schools and the Institute Textile de France were represented by booths, mostly with photographs of their facilities and experimental apparatus and a few testing machines.

In the chemical section, the exhibits were very much like those in our shows . . . bottles, charts, fabric samples. It seems to be hard to get much out of a bunch of bottles, in the way of competing for interest against gorgeously printed silks and damasks and other items in the textile line. There was nothing unusual here, other than that the line of textile auxiliaries seemed much more generally inclined to non-ionics than in America. This is undoubtedly due to the general prevalence of very hard water in France and Germany. Put a soapy hand quickly under the faucet, and immediately the soft foam is transformed into a sticky lime-soap residue before it can be rinsed off. America was represented principally by concerns having European offices, such as Monsanto and DuPont.

Nylon was shown in its own two-story structure, exhibiting everything from a full scale model of a nylon spinneret machine to finished fabrics and plastics of nylon. A girl demonstrated how to sew nylon on a home machine; rope and tent equipment from a Himalaya expedition was shown with mountaineering photos; all sorts of laboratory testing machinery was in action in the center cage.

Another small building showed

Bancroft's "Everglaze" process and the great variety of possible fabrics from cotton. They stressed obtaining of fine fabrics with excellent properties through the use of chemicals and cheap manufacturing processes, to enable the public to get fine goods for little money.

Emphasize the American Way. Also handed out were a lot of very interesting propaganda for the American mass-production methods, and what they mean to the average man. One little pamphlet, printed under the auspices of French textile groups, pointed out that the average American working man earned 70,000 francs ($200) per month, for which he could buy in America items which would cost him 100,000 francs in France. Six million French workers earn between 13 and 22,000 francs (average $50). The pamphlet exhorted all workers and management to study production methods and improve them for the good of all. Seems to me our labor unions could study things like that, and study the comparative standards of American and European employees, and learn a lot about the effects of feather-bedding and holding down production per man. After all, the employee is also a consumer, and the cheaper he is able to make things, the cheaper he will be able to buy the things he wants, and the more of them will be available to him.

Beyond these buildings, clustered in a semi-circle around the 65-foot pylon in the exposition yard, are a number of small exhibit buildings showing exhibits from manufacturers of textiles in a number of different countries . . . the United States, Egypt, India, Italy, Scotland, and so on. To me one of the most beautiful of the typical national fabrics was the web-fine cottons of the Indian saris, worn by the higher caste of Hindu ladies.

Farther down into the fabrics building are hundreds of exhibits by manufacturers and agents of everything conceivable—from mending thread to oriental rugs. Out in the back yard pen a couple of fat dirty sheep ate contentedly.

Passing the fur exhibit, we were strongly tempted to snatch one of those soft fuzzy coats—the French weather had penetrated into our bone marrow and settled there.

Several of the Paris designers had a booth with a tiny stage on which a couple of beautiful Parisian gals modeled the latest thing in fashions. It competed in interest with a nearby hand-loom where a couple of apprentice textile students were weaving a complicated pattern of picture design in white on a red ground.

Part of the rug exhibit was an enormous floral rug about 20 x 30 feet in growing flowers, moss, grass.

There was terry cloth, there were voiles, there were damasks and marquisettes, upholstery materials and embroidery threads . . . everything . . . Just imagine it . . . they had it.

From there we go on into the machinery section, or if we are coming back fresh the next day, we can enter the grounds at the other end of the machinery exhibit.

Americans Exhibit. Out of a total of 21 American exhibitors, we saw six in the machinery department: Crompton & Knowles, Draper, Whitin, Scott Testers, Universal, and Saco-Lowell. Most of the American exhibitors had French representatives, but not all.

Among the most important countries represented in the machinery department were France, of course, then England, Switzerland, Germany, Spain, and Italy (through the whole exhibit I saw not one from Russia or the Communist satellites, although I understand that Hungary and Czechoslovakia each had one exhibit—they must have been in the fabric section).

Naturally, with these different countries, each with its own approach to the textile problems, its own types of fibers and fabrics to consider, its own relationships of technique and labor, there were bound to be many differences in the details of the machines. For me, as a chemist, it was difficult to evaluate what I saw. I was not too ashamed of that, as I know many engineers that refuse to evaluate a machine until they have watched it run for a while; still I was sorry not to be a bit more of an expert in order to make a proper report to the folks at home.

I tried several approaches. The Exposition's "Press Bureau" was very friendly and anxious to help, but knew even less than I. The secretariat was no better, nor were the official guides. They suggested that I talk to the representatives in the booths . . . but I had tried that, and each was interested in putting over his own product. I didn't blame them, but that was no help.

Finally I found that by collaring odds and ends of British and American visitors (very few Americans were evident), and asking them what they found most interesting, plus what was also evident to me, some dope was gathered. A thing that looked revolutionary to me, or to them, might not be at all, so if you know about it and don't like it, discount it.

As mentioned previously, the machinery exhibit was about twice or more as extensive as Greenville or Atlantic City recent shows. In addition, it was made more interesting by having the ideas from many countries which were thrown in for what they were worth. Maybe our conditions do not need them, but we might get more ideas from them.

Slashing Equipment. First, the machines with which I as a textile chemist am familiar: There was nothing particularly radical in the slashers I saw. The types were similar to the ones described in "Swiss Slashing Practices" a couple of years ago in TEXTILE INDUSTRIES. The French slasher of Leon Olivier had an interesting attachment between the size box and the drying chamber for brushing the yarns, in order to lay the fibers, similar to the old Scotch system used about 1900, but mechanically a little more modern. They use it, however, only on jute and very coarse and wild fibers, never on cotton.

Both the British and French slashers were hot air types. They make very few cylinder slashers. They have tried rubber squeeze rolls, but using usually only one squeeze roll on a slasher, have never had much luck with the rubber coverings (possibly not the right density).

Among the finishing machinery, I found nothing of particular interest to me. All stainless steel, and beautiful, but it is hard to invent much new on a padder, or a package dyeing machine, other than minor modifications of design. A beautiful automatic jig, a nice shiny calender, a big centrifuge, but they all had a very familiar look. Actually, the amount of finishing machinery compared to the rest of the exposition was not great.

Most of the machinery exhibitors complained bitterly about the running conditions. The only heat in the buildings was that generated by the people wandering around. At the typical spring weather conditions for the north of France—45 degrees F and about 98% relative humidity, they were having a tough time of making an A-1 demonstration. Particularly the fellows trying to weave rayon were really tearing out their hair in clumps.

Looms. Of course, the big hit of the show to most folks were the circular looms and the shuttleless looms. There were three of the former and two of the latter, all running (though one of the circular looms was on a dry run with no yarns).

All three of the circular looms are French. That of the Turboloom Corp. ("SAGEM") and the one of Saint Freres were very similar in design. The loom itself is in the center, fed by two loom beams, one on each side. These each feed to half the circle of drop wires, and from there into the center. Four shuttles run continuous-

ly around the outside of the tube of fabric, which passes below into the basement as it is woven, and is there wound on a beam. The shuttle holders push the yarn into place, eliminating the need for a reed. The heddles are in five-inch sections on a circle just inside the drop wires, actuated by cams from below, and move so fast it is hard to watch the sequence of operation.

It was fascinating to watch the Saint Freres loom in operation, weaving jute bags at the rate of 400 picks per minute (450 picks per yard). At the rate of about one-half inch per second, the fabric really flows out of the loom. They have a number of the looms in mills at present, using one weaver to four looms, but should be able to use more. With the heavy jute there is comparatively little yarn breakage, and only 30 seconds were required to replace the four shuttles when they ran out. The shuttles held 3½ lb and ran about 20 minutes. Mr. Bride, who was with the machine, said they sell at about $3000. They have been developing the loom since 1934, and say they hope to have one for cotton within a few years.

The two main difficulties confronting them in weaving lighter yarns are the fact that the present looms run under fairly high tension, and that to run a much finer fabric would also require many very much smaller parts in order to crowd everything into the same space. But for jute baggings, the loom seems ideal.

The general principle of the Fayolle loom is similar. In it, the bagging moves up instead of down, and the shuttles (two in number) run around inside the bag as it is woven. Instead of small sectional heddles, the heddles are two circular pieces, operated by four arms which move in such a way as to chase the shuttles around. This gives a very much simpler mechanical section than the complicated cam set-up of Saint-Freres and "SAGEM," but with only two shuttles weaves only about half as fast. They claim it takes 10 seconds to change the shuttle. I watched the girl—she did it in six, from the time the loom stopped till it started again. A one hp motor is required.

Shuttleless Looms. The shuttleless looms were of two types. Either one was capable of weaving any type of yarns and practically any sort of pattern.

The Sobretex loom operated by a large "needle" on the end of a rigid metal bar, the other end of which was actuated by a gadget which looked like a light magnesium picker stick. This needle picked up a filling yarn (which unwound from a large cake at the side of the loom), carried it to the center of the shed, where it was picked up by a similar needle which had come in from the other side, and which carried it back the rest of the way across the cloth, releasing it with about a third of an inch sticking out beyond the selvage.

They claim at present a speed of about 360 picks per minute, and say they are working on a loom capable of doing 500! On top of that, they claim they can operate 35 looms with one weaver and one helper. The present loom weaves comparatively narrow fabrics as a limit (about 40 inches), but they can increase this by a change in the bar which pushes the needles.

The Ballbe shuttleless loom operates by pushing one yarn doubled all the way across the shed, looping it around a wire which holds the yarn till the shed changes. It was weaving a 100-inch plaid at about 70 picks per minute, but these were double picks, giving and equivalent of 140 picks, which isn't bad for 100 inch goods. The gadget that pushes the yarns across is on the end of a flexible steel ribbon, which winds on a large wheel as it comes out of the shed.

Either loom can, of course, have any sort of warp pattern, and a number fo filling colors, by use of a selector which pushes the proper thread into place as each pick is being made. The Ballbe loom feeds filling from both sides alternately; the Sobretex feeds it always from the same side.

Both looms, of course, have the disadvantage of imperfect selvages. Still, where most of the goods are dress goods or for similar cutting, the selvage is generally cut away anyhow, and not important.

Both of the shuttleless looms run very quietly, and the circular looms make no more noise than a spinning frame. Gosh, just imagine a quiet, vibrationless weave room!

Among the rest of the looms, I noticed a crowd gathered around the Spanish Cerdans loom . . . an ordinary looking job, but running like the wind. By actual timing with my own watch, the thing was doing 270 picks per minute, on about 40-inch cloth. The Draper man said his X-2 will do that, too, but he didn't think either his or Cerdans' would do a proper job at that speed in the mill, and he was demonstrating at about 210. I'm not too much of an expert on that, but it was the fastest running of a shuttle-loom that I ever saw.

Circular Knitter. Speaking of speed, the most amazing figures to me which I saw was on the operation of the Lebocey circular knitter. The darn thing, with 828 needles, was knitting at the rate of 18 pounds per hour, and at 16,000 loops per second! After asking the man twice I got somebody else to ask him, but he stuck to that figure.

All through the show I got the impression that even if the Europeans were not up with us on production methods, it was certainly not the fault of their machine designers. They're not behind us there, and in some ways are ahead. For instance, I had seen the Swiss Rueti loom some twelve years ago with no overhead harness mechanism. Now practically all the European looms have the heddles actuated from below, leaving the top of the loom perfectly clear. And on most, the heddle frame is of aluminum, rather than wood. Generally, in actuating from below, rigid links are used, which are not subject to deformation and require no adjustment once set.

Gear Drive Spinner. All the spinners seemed to be interested in the comparatively new German ring spinning frame of Spinnbau G.m.b.H. The conventional tapes are eliminated and replaced by plastic helical gears which drive the spindles. These gears all on one shaft along the side of the machine, and enclosed under the spindles, are loose on the shaft and turned by a metal centrifugal clutch which is fastened to the shaft. This holds the gear just tight enough to turn so that the spindle may be stopped to repair breaks as desired.

The ring rail is stationary, and the spindles ride up and down on the drive box. Spinnbau claims that the stationary ring rail gives a more even yarn tension and a constant balloon, which makes up for any irregularity in the motion of the traveler, as far as yarn tension is concerned.

A two-speed motor is used, driving a shaft having a pyramid of gears in the transmission. Speed can be chosen to give any one of twenty speeds, and with the two-speed motor, a total of forty speeds. The gear change mechanism is operated by a special key so that it cannot be tampered with.

There may have been more. Other than a few details, and a very large number of variations, due to differences of opinion in how a machine should be put together, if there was more, I missed it. Next time, I'd like to go in a group containing also a carder, a spinner, and a weaver.

Best Regards,

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Discusses Slashing and Weaving

Staff Report

AT THE REGULAR spring meeting of the South Carolina Division, Southern Textile Association, held in Spartanburg on April 21, Joseph Delany, superintendent, Joanna (S. C.) Cotton Mills Co., led a discussion panel composed of: John M. Caughman, superintendent, Spartan Mills, Spartanburg, S. C.; J. T. Chalmers, superintendent, Orr Mills, Anderson, S. C.; C. L. Williams, Charlotte, N. C.; and M. M. Taylor, superintendent, F. W. Poe Mfg. Co., Greenville, S. C. The panel discussed a series of questions on slashing and weaving, following a paper by Ivan Feng, of N. C. State College, on carding experiments at the Textile School in Raleigh.

Tight Selvages on Print Cloth

The first question posed the panel was, "Do most print cloth mills have trouble with tight selvages breaking during the bleaching and finishing process; and if so, what are the causes of these tight selvages and how can they be corrected?"

Discussion: "We do not have trouble on weaves in the lower counts. It is only when we get up as high as 80 square that we have trouble with tight selvages."

"By using only half as many ends in every other dent in the selvage we have reduced this fault."

"Part of this trouble is the result of vibration of the temples. It can be partially eliminated by stopping that temple vibration."

"Another cause is too much tension of the filling. We tried using a singles yarn with excessive twist in the selvage, and that helped a great deal."

"Other causes are crooked beams and the use of a filling which is heavier than the warp."

Slasher Speeds for Print Cloth

Question: "What slasher speeds do mills run on yarns in the print cloth range, and is this limited by drying capacity or by inability of the slasher to do good work at higher speeds?"

Discussion: "We think drying capacity and tension are the limitations to high speeds."

"We run at 80 yards per minute on 80 square. Drying capacity keeps us from going faster. Of course, penetration may be affected at higher speeds."

"I don't think penetration would have much to do with it. The higher speed, the greater the pick-up, but that can be controlled by reducing the viscosity of the size."

Homogenizers

Question: "What results have mills obtained in the use of homogenizers?"

Discussion: "Several mills we know are well pleased. One group of mills has been so well satisfied with the results in one of their mills that they are now putting them in all. They claim better weaving. Other mills have used the machines for two or three months and then given them up."

Nylon Slasher Cloth

Question: "What results have mills obtained when using nylon or chemically treated slasher cloth?"

Discussion: "The major objection is that this type of cloth tends to harden after it has been in use a little while."

"That is true, but this trouble can be overcome by laundering the cloth before putting it into service. That seems to prevent its hardening for a long time, and then when it does harden, launder it again."

"We are using a 20-30% nylon cloth, and it is giving very good results. We find that it lengthens the life of the blanket about 50%."

Size Ingredient

Question: "Several sizing companies have developed a highly concentrated locust bean gum gel for which they make great claims about high efficiency in weaving. What results have mills obtained from use of this gel?"

Discussion: "We find there is less shedding at the looms, but there is no noticeable increase in efficiency."

"We have found that to be true, too."

Slasher Cylinder Drives

Question: "When minimum stretch is desired on a three-cylinder slasher with a multi-motor drive, which is the best way to drive the cylinders, with a motor or pulled by the yarn?"

Discussion: "Having the yarn drive the cans is undoubtedly best."

"In mills using gear drives for cans, it is frequently noted that the gears are worn on the forward side rather than the driving side of the teeth, indicating that the yarn is doing the driving anyway and the gears are merely acting as a brake and forcing the yarn to drag over the surface of the cylinder. I will go along with the yarn drive."

"The ratchet release is a good answer. Then if the yarn tends to pull the cylinders faster than the

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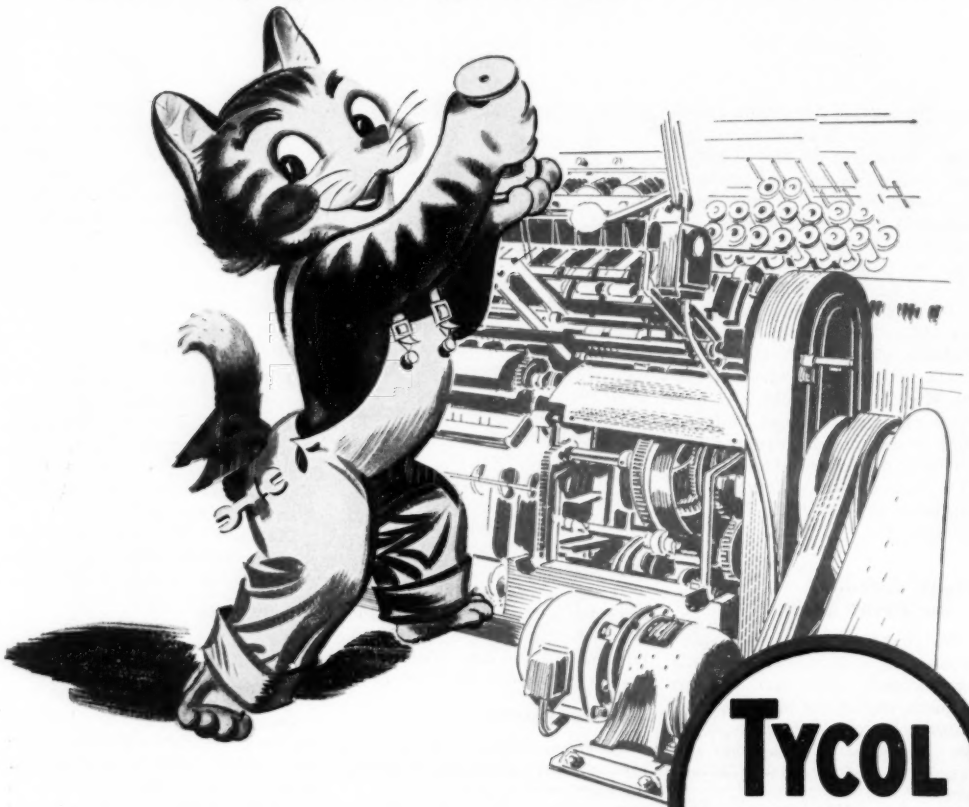

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drive, the ratchet arrangements permit the cylinders to move at the yarn speed."

"If you are going to use ratchets, why have a drive at all?"

"I think that it is a question of starting-up."

"That is all very well when you are talking about the old type of slasher drive, but this question referred only to the multi-motor drive, and there is a gradual, steady acceleration with this type of drive."

"If we can have yarn doing the driving day in and day out and only get 1¼ to 1½% stretch, why worry about any other type of drive?"

"Also, there is some advantage in having the yarn do the driving in that it assures a close contact between yarn and cylinder."

"Rusty" Selvages

Question: "How can you prevent rusty selvages where you use two-ply yarn for selvage, and it does not dry as well as the body of the yarn?"

Discussion: "Keep the inside flanges of the beams well painted."

"We apply paraffin wax to the inside of the beam heads and this keeps the damp yarn from rusting the metal."

"How do your finishers feel about the paraffin that gets on the yarn?"

"They have not complained—apparently it does not give them any trouble."

"I cannot say the same for ours. They asked that we stop using paraffin."

Size of Squeeze Rolls

Question: "Should the copper rolls on back and front be the same size, or should the finishing roll be a fraction of an inch smaller than the back roll to avoid stretch?"

Discussion: "We turn both rolls to the same size. It may be theoretically better to have the back roll a little larger, but in removing and replacing the rolls, the operator or maintenance man is too likely to get the wrong roll in the wrong place. For that reason we make them the same size."

"It really is better in practice to put the larger roll in the back. You can overcome your objection easily by marking the rolls 'Front' and 'Back' so there will be no trouble in getting them in the right place."

"We turn our front rolls down to .002″ smaller than the back rolls and mark them as suggested."

"I don't think it makes any difference. You are going to get a little stretch anyway, and the little difference in diameter is not enough to make any difference in the end."

Shuttle Cutting Out on Battery End of Loom

Question: "We now get to the weaving questions. How should you line the battery end plate when the bottom side of the shuttle on the battery end of the loom is cutting out on coarse work?"

Discussion: "We had that trouble and found it was caused by setting the lay end above the shuttle race. It is best to line the end plate flat with the shuttle race."

"To avoid that trouble it is best to run as low a back shelf as possible."

"At one time we ran some very heavy yarn; it was 1s, in fact; practically sash cord. We had to take the race plate off the loom."

Slack Selvages on X-Model Looms

Question: "How can you eliminate slack selvages on X-model looms?"

Discussion: "Of course, good loom fixing is the answer to that."

"The trouble is that any loom with a double spring wind-up presents the problem of getting equal tension on each side. Unequal tension will cause one selvage to be slack."

"Having take-up rolls out of line or having any part of the loom out of line so that the cloth is taken up at an angle will cause slack selvage. It is just a question of having more tension on one side than the other."

"You can also get slack selvage on looms with single spring wind-up, but it is not as frequent a complaint."

Cleaning Looms with Steam

Question: "What is your opinion of or your experience with the cleaning of looms with steam?"

Discussion: "We have tried it and don't think much of it. The steam is too wet. It just wets the floors and doesn't clean the looms."

"If you are having trouble with humidity in the weave room, that's your answer."

"Yes, and it is excellent for taking wallpaper off walls."

"Those objections are legitimate ones, but if you are overhauling looms and are taking them out of the weave room to do it, steam cleaning is effective. It does a good job when used in that way."

"Even then we prefer solvents."

Overhead Cleaners in Weave Room

Question: "What is your experience with or opinion of overhead cleaners for weave rooms?"

Discussion: "It is purely a question of economics. We made an investigation of cost of cleaning and found that it varies greatly from mill to mill. Total costs are reported as low as $10.00 per loom per year to as high as $200. The higher cost is in the fine yarn mills. We think overhead cleaners could warrant the first cost if cleaning costs are over $30-$40 per loom per year."

"There is no question but that they will work—certainly to some extent. It is, as you say, a question of balancing the investment with

New Officers

South Carolina Division
Southern Textile Association

Chairman: **James A. Chapman, Jr.,** Superintendent, Riverdale Mills, Enoree, S. C.

Carding and Spinning Section Chairman: **Joseph F. Chalmers,** General Superintendent, Mathews Mill, Greenwood, S. C.

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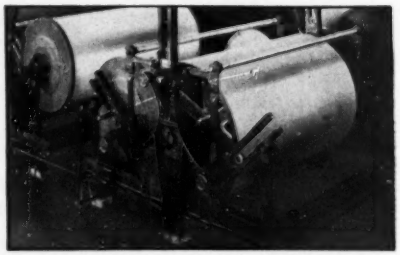
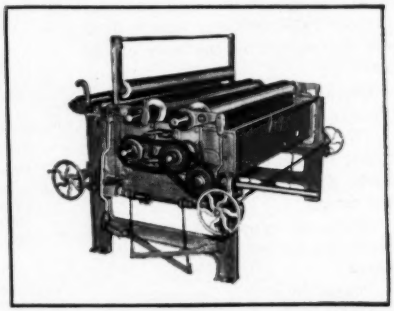


WHITE CREEL (above) — positively driven — controls yarn stretch; makes sizing faster, more uniform; smooths starts and stops; eliminates breakage and waste. Also available: standard over-under type creel with continuous side rails or extra-height, close-coupled creel for limited space. All creels ball-bearing equipped.



Stainless steel SIZE BOX with ball bearings on size rolls. Ball bearing hangers on squeeze rolls hold them in perfect alignment and are connected to handwheel to permit raising for washing purposes. Note chain drive with cover removed.

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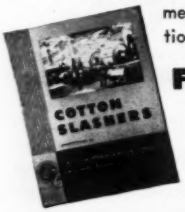

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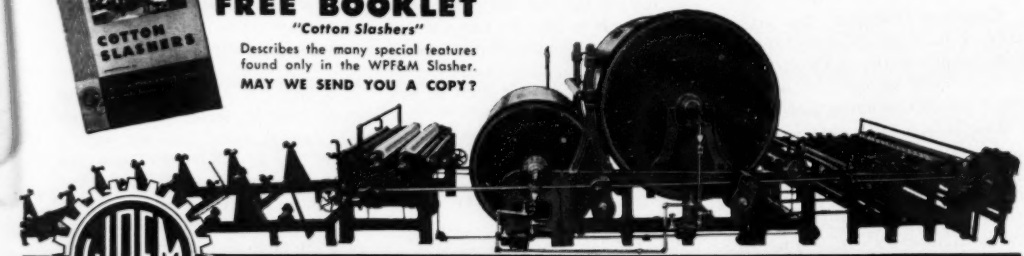

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the reduction of cleaning costs after they are installed."

Overhauling Looms

Question: "Which is better 'preventive maintenance'—by your own men or having an outside crew come in to overhaul looms?"

Discussion: "We believe in having our own men do the type of job that requires no total overhauling."

"Most outside firms do a creditable job, and there are times when they can be used to advantage, but we want our own men to have the experience. We think it is more important to build personnel than to build looms."

Endless Check Straps

Question: "What is your experience with the use of the endless check strap on X-2 looms?"

Discussion: "We have the endless straps on 100 looms and the conventional type on another 100. We have found the endless type to be very satisfactory in operation, and it lasts about three times as long."

"We have used them on X looms and find they work well on one side but not on the battery side."

"Is there any reason for this difference on X and X-2 looms?"

"Yes, the X-2 gives more room for the check strap than the X."

Wool Stock Lubricated in Duct

on journey from pickers to card room

Less oil is consumed, yet lubrication is just as effective; sludge on machine parts eliminated.

Staff Prepared

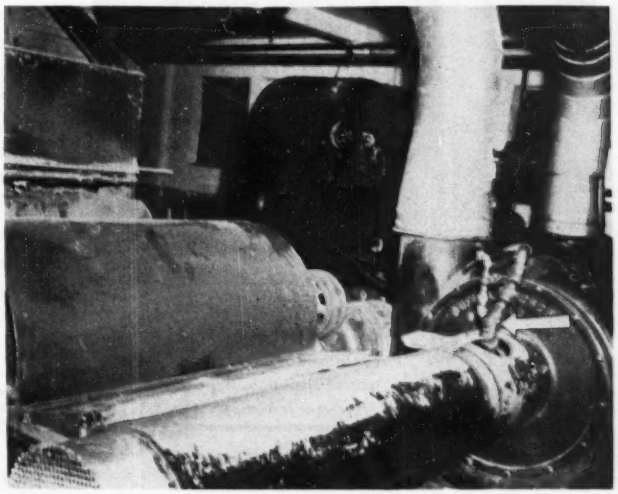
EMULSION is applied to wool stock while in process of being air blown to the card room at Carleton Woolen Mills, Inc., Rochdale, Mass. Spraying is accomplished by means of a single nozzle located in a section of air duct between picker and blower.

Replacing the usual line of nozzles across the picker feed apron, a standard nozzle is used in the duct. The jet is opened to maximum and steam pressure is several pounds higher than formerly. In this manner the proper percentage of emulsion can be delivered to the stock, despite rapidity of passage through the duct.

Actually, the wool is in an optimum condition for oiling. It has been opened thoroughly during picking. Air blowing tends to fluff it further, thus permitting more uniform penetration of emulsion on the fibers.

A savings in oil consumption has been effected by the mill. In addition, significantly less picker down-time is being experienced since sludge removal from beater blades and other parts, as required periodically in the past, has been eliminated.

PIPES in conduit near blower (see arrow) are air and oil lines used to apply emulsion to wool stock.



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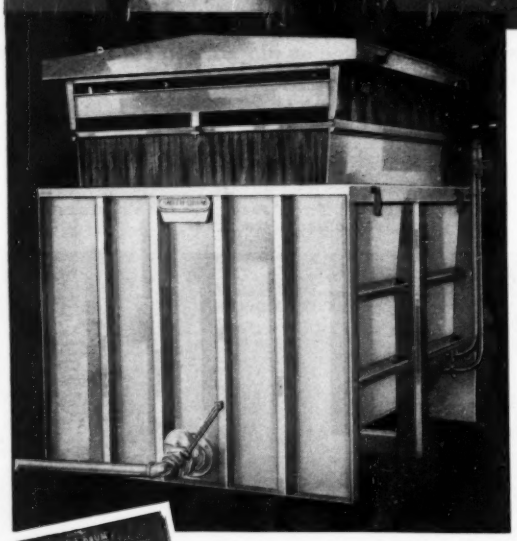

This machine introduces the "pulsating flow" principle of dyeing woolen and worsted yarn in skeins. The flow is in the "downward" direction only and the yarn is permitted to *relax* at regular intervals during the dyeing process. As a result, the yarn is not subject to continuous tension or stretch. The strands of the skein remain completely free and the fibers of each individual strand retain their full life and resilience. Yarn dyed in The SMITH-DRUM Pulsating Machine is actually *improved* in both appearance and feel. Better winding qualities of the dyed yarn and uniform dyeing with level shades . . . combined with economy and versatility . . . are among other important advantages you cannot afford to ignore.

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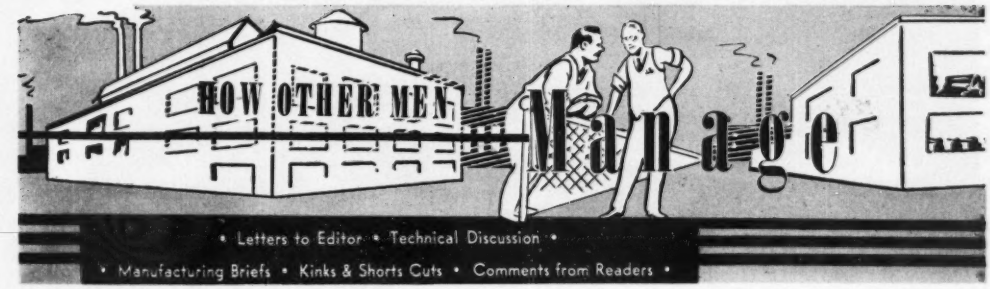
HOW OTHER MEN Manage
• Letters to Editor • Technical Discussion •
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Comments on Reworkable Waste

EDITOR TEXTILE INDUSTRIES:

Utilization of reworkable waste is one headache that even the most progressive mill management cannot completely eliminate. In order to keep quality up to acceptable standards most cotton mills make a certain amount of waste such as tail ends of laps, light and heavy sliver from cards and drawing, as well as roving waste cut from deformed bobbins. This waste is good stock, and in most instances it would be out of the question to do anything with it but put it back into the stock in process at the opener room.

An excessive amount of waste fed into the mix at any one time can cause much more bad work than can be salvaged by feeding this type of waste back into the mix. Also variation in amount of reworkable waste fed will tend to make picker laps, card and drawing sliver, and roving weights vary excessively. Such trouble has been known to shut a mill down due to inferior quality work being produced.

The softer types of waste, such as lap waste and card sliver, can be fed back into the mix without any further processing. The hard types of waste, such as drawing sliver and roving waste, should be run through a waste machine to cut it up thoroughly and fluff the material so that it will not tend to hang up on spike aprons and wrap around doffer beaters. Unless this type of waste is first broken up in the waste machine the spiked aprons cannot properly break it up after it is fed into the hoppers and it will go into the lap as strings and tags that can never be drafted properly in subsequent processes.

Reworkable waste should be fed back into the mix from one specific hopper which delivers the stock into the opening line back of the pickers. Most of the cleaning machinery can be by-passed and the waste fed into the mix just before it enters the pickers because the bulk of the trash, motes, dirt, and waste has already been removed in previous processes.

An important point to remember is to be sure that an even flow of reworkable waste is always fed to the stock in process. The waste hopper should be set up to put a predetermined percentage of the reworkable waste back into the mix. This can be done by setting the doffer beaters and controlling their speed. Also the speed of the aprons can be controlled so that the correct amount of waste is fed.

It is important to have waste feeding in at all times that the stock is being fed. In this way uni-

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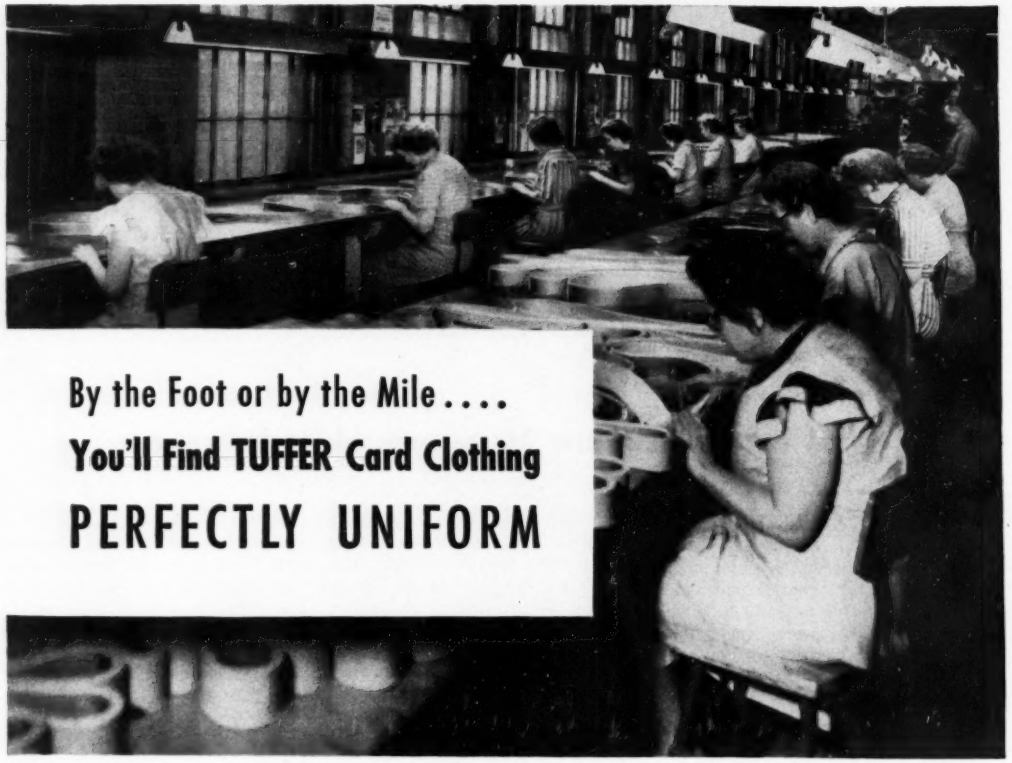
ONE HUNDRED DOLLARS will be awarded for the most helpful short cut, kink, time-saving device, cost-cutting suggestion, or quality improvement idea submitted by July 15.

Contributions eligible for the prize must not have appeared elsewhere and must not be sent to any other publication.

All material will be paid for at regular space rates, upon acceptance, irrespective of the contest winner. Advise when submitting entry if participant's name may be used. Only one award will be made at the close of each contest.

Participants are not restricted as to number of items submitted to compete in the contest. Each entry should be described in sufficient detail to make it easily understood, and where possible, glossy photographs or pencil sketches should be included. Finished drawings are not necessary.

All entries for this contest must be postmarked not later than midnight, July 15, 1951. Address: Editor "Textile Industries," 806 Peachtree Street, N. E., Atlanta 5, Georgia.



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formity of mixture can be maintained at all times. Care should be exercised by the operator to fill the hoppers uniformly at all times so there will not be a tendency for the hoppers to feed heavy when full and feed light when they are beginning to get empty.

It is much better to allow a back log of waste to accumulate and maintain the predetermined amount of feed than to try to feed all the reworkable waste each day. Over a period of time, if proper steps are taken, all of the waste can be reworked. If not, steps should be taken to cut down on reworkable waste or revise percentage of waste fed. If done haphazardly, the changing of percentage of waste fed can cause troubles such as outlined previously.

An important adjunct to any system of proper utilization of reworkable waste is an intelligent and competent waste machine operator. He can be of great assistance in properly processing the hard waste. He should be patient and not try to feed stock too rapidly so that the machine stays choked a large part of the time. Also the operator should be alert and able to distinguish the different stocks being run and keep them separated. Feed rolls on the waste machine should be kept clean and free from chokes, and if chokes can be kept off rollers and around screens, a potential source of fires has been eliminated. The lags on the waste machine should be in good condition. Dull, worn, or bent needles on the lags tend to form chokes and also will not properly cut the stock. Dull needles are always a source of excessive neps.

CONTRIBUTOR NO. 8377

Laboratory Dryer for Rapid Testing

EDITOR TEXTILE INDUSTRIES:

Rapid testing of textile material samples for shade match, luster, hand, etc. involves the drying of test swatches, skeins, and raw stock taken from the production machinery. A simple device permits this to be done with a minimum of expense and space requirement, and any one can put it together in a short time. Total cost of the device is less than $15.00.

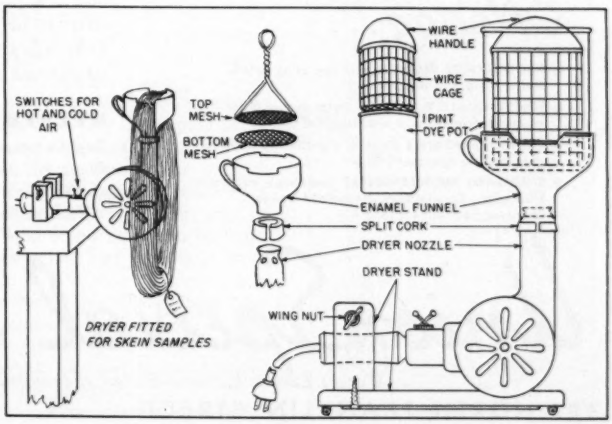
The implement consists of a ladies' hot air hair dryer mounted by means of a wooden split clamp on the edge of a table, or on a small wooden stand so it can be carried about easily. The split clamp fixes the dryer handle by means of a wing nut and bolt, so that the air jet is upright.

A 4 or 5-inch diameter enamel funnel (obtainable at hardware stores for filling fruit jars) is fitted to the dryer nozzle by means of a split cork or rubber stopper sleeve. We use a 2-inch cork. Into the wide end of the funnel is fitted a stainless steel wire gauze disc onto which the material to be dried is placed. The stainless steel mesh is identical with the quality used in industrial filter presses, the wire thickness and mesh being that of a laboratory wire gauze.

When it is desired to dry swatches of woven or knitted cloth only, a similar "top mesh" with attached stainless steel wire handle is placed on the swatches to keep them in place during drying. The central part of the accompanying illustration shows this set-up. When yarn samples have to be dried, a skein from the dyeing machine may be placed loosely over the top of the funnel, which has a flat recess ground into it for this purpose. The bare metal of the recess is covered with suitable paint to protect the skeins. We use a dip into a phenolic baking enamel followed by baking over a gas flame.

This procedure accommodates yarn and piece goods, including flat and tubular knitwear. When hosiery is to be dried, it is placed across the recess like skeins, and a portion of the stocking about 4 inches long gets dry in 30 seconds or less. When drying half hose, the leg end of this is dried by stretching over the funnel rim. However, the use of steam heated hosiery forms is more satisfactory here.

Finally, raw stock samples are very slow drying in ovens, and the right hand drawing illustrates a quick drying attachment to the in-



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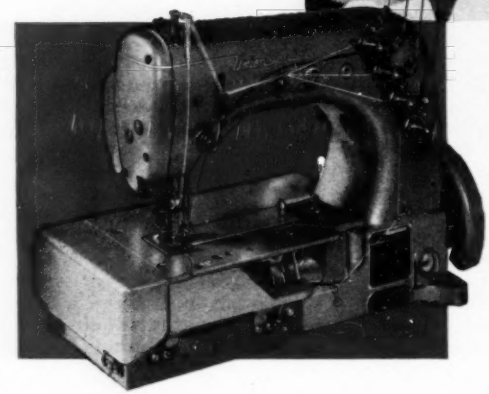

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strument, which can be fitted and removed in no time. It consists of an extension upwards of the enamel funnel, which can be made out of 4-inch or 5-inch galvanized stove pipe, 6 to 8 inches in length. We use an old one-pint laboratory stainless steel dyepot with the bottom cut off. Into this is fitted, with about one-half-inch clearance all around, a stainless steel gauze cylindrical cage with wire handle at the top. The raw stock is placed into the cage, and this is lowered into position inside the extension, resting on the funnel sides or on the "bottom mesh" shown.

In our laboratory where textile materials in almost any stage of manufacture require sample drying, the device shows two advantages by comparison with other sample drying methods:

(1) It is adaptable to rapid drying of almost all types of samples.

(2) When samples are dry, they can be cooled rapidly by switching off the heating element by a separate switch, and blowing cold air through the samples. The need for this in shade matching is well known.

CONTRIBUTOR No. 8350

More on Variation in Drawing

Question Briefed: *Variation in the weight of drawing has been troublesome to us recently. We have taken three weighings from the same head at various times during the day and have found as much as five grains difference in the weight.*

A 14-oz lap is used to make a 65-grain card sliver. Drafts of 6 on first drawing and approximately 7 on finisher drawing produce a 55-grain finisher drawing sliver. Cards are manually stripped twice each eight hours.

We have checked our cards and find no mechanical condition to cause this. Possibly some of the readers of your magazine may have some ideas on this. If so, I would like to hear from them. (CONTRIBUTOR No. 8324, *Oct.* '50.)

EDITOR TEXTILE INDUSTRIES:

In your October issue, CONTRIBUTOR No. 8324 raised a question about variations in weights at drawing frames. We overcame this difficulty with a little scheme that would be invaluable to all mills.

In the first or breaker drawing, the standard procedure is to run 6 ends of card sliver to each delivery. In this case the cards should be separated into blocks of 6, numbering each card consecutively from 1 through 6 in each block. Then take a small stencil and cut the numbers 1 through 6 and stencil a number on the roving cans, numbering so many cans with each number. Have your card tenders or can doffers be sure that a No. 1 can is run on a No. 1 card and a No. 2 can on a No. 2 card and on down the line in this way.

As the cans are doffed and brought to the drawing frames, the No. 1 cans are put in one place, the No. 2 cans in the next, and on down the line through 6 in this manner. In creeling, be sure that one can of each number is put in each delivery on the drawing. In this manner you are assured of sliver from six different cards running on each delivery, and you have a better cross section of your carding than if all the cans came from one or two cards.

Under the most ideal conditions no two cards will card exactly alike over a given period of time, and in this manner you get a mixture in each delivery from 6 different cards. You will find that it is much easier to control your weights from an arrangement like this. Also, you get a much better blend of your stock by following this procedure, both in runs of 100% stock and in runs of blended

Bracket Holds Waste Can

EDITOR TEXTILE INDUSTRIES:

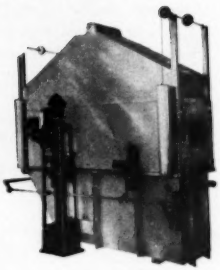
Almost every mill uses old sliver cans as waste receptacles, especially for paper, lunch bags, scraps of leather, pieces of wood, and other trash, but sometimes there is difficulty in keeping these waste cans in place.

The illustration shows a very simple method of providing a bracket on the workbench, wall, or post where the can may be kept. This bracket may be made from 1-inch or 1½-inch flat iron, or a more fancy one made from pipe and fastened with flanges. It will, of course, be made large enough to permit the can to be removed easily for emptying.

CONTRIBUTOR No. 8374

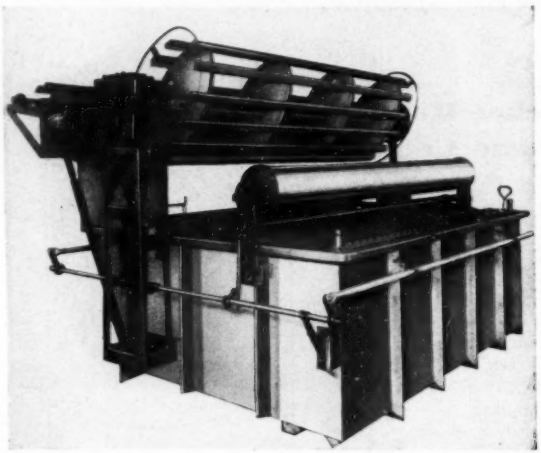
Is Dyeing Your BOTTLENECK ?

Don't let dyeing disrupt your production schedule—when there is a new Hinnekens Dye Beck, which can solve your problems!



Constructed for heavy duty, this machine is designed for a long life of trouble-free operation. The processing of materials with this new Hinnekens Dye Beck gives uniform quality to every yard of fabric.

Obtainable for either open or enclosed operation the Hinnekens Dye Becks have proven their efficient production ability—for leading processors now use them throughout the United States, Canada, Mexico, and South America.



OTHER TEXTILE EQUIPMENT OF THE HINNEKENS LINE—

- Tentering frames
- Continuous Boil-off Machines
- Hydraulic Calenders
- 2 and 3 Roll Padders
- Palmer Tenter Units
- Embossing Machines
- Jiggers and Mangles
- Beaming Machines, etc.

Don't Delay—Call The Hinnekens Sales Representative nearest you.

New England Representative PETER JASWELL & SON 37 BRENTWOOD AVE.— PROVIDENCE 8, R. I.

Southern Representative T. E. LUCAS ASSOC., INC. P.O. BOX 1696— CHARLOTTE 1, N. CAROLINA

Mexico and South America MEYER, LYRA & CO., INC. 227-229 FULTON ST. NEW YORK, N. Y.

THE HINNEKENS MACHINE CO., Inc.

207 GODWIN AVENUE PATERSON, NEW JERSEY

stocks. The mixing of several cards makes the blend more uniform throughout and the weights much more uniform.

At first glance this practice may appear complicated, but it is really quite simple, once your cards and cans are numbered. It creates no extra work on the operators and pays big dividends in more uniform weights and better blending of stock.

CONTRIBUTOR No. 8363

◆

EDITOR TEXTILE INDUSTRIES:

From the information given it would appear there are two reasons for five-grain variation in weight at same delivery of drawing.

First: Eight* hours between stripping is entirely too long a period, unless continuous strippers are used. The cylinder grad ually loads with cotton and there is probably 20 to 25 grains difference in weight of card sliver. Although cards are stripped at irregular intervals, it would be impossible to arrange the card sliver back of drawing in order to deliver a uniform weight sliver.

Second: A draft of seven is too long for 4-roll drawing and no doubt this also affects the eveners. Humidity of course does affect the weight but CONTRIBUTOR No. 8324 said, "Humidity is controlled as closely as possible." Unless he has automatic control, the humidity will change from morning to afternoon, causing variation in weight.

My second suggestion would be that the card sliver be reduced to 55 grains. With a 14-ounce lap, the draft would be about 110 which would give a better separation of fibers and at the same time would automatically reduce the draft to six at both processes of drawing.

Reducing the weight of card sliver will lower the card production, but this can be compensated for by increasing the doffer speed. There are any number of mills carding 12 to 16 pounds per hour, using 52 to 55-grain slivers, and at the same time producing a good card sliver.

Assuming the cards and drawing are in good mechanical condition, if the cards are stripped every four hours and the weight of sliver reduced to 55 grains the variation at drawing should not be more than 5%.

CONTRIBUTOR No. 8365

* *Editor's Note: Contributor No. 8324 stated that he stripped the cards twice in eight hours.*

Comment on "Physical Textile Testing"

EDITOR TEXTILE INDUSTRIES:

Congratulations on the fine article in your March issue on Physical Textile Testing. However, on page 123 is given the method of converting from cotton count to denier, and vice versa, which seems to be fouled up.

The correct conversion formulas are as follows:

$$\frac{5314.9}{\text{Cotton Count}} = \text{Denier}$$

$$\frac{5314.9}{\text{Denier}} = \text{Cotton Count}$$

CONTRIBUTOR No. 8380

Latch Opener for Circular Rib Machines

DESPITE the high efficiency of today's electromatic stop motions on circular rib and interlock machines, there are occasions when the feed hole in the latch guard becomes plugged with lint or a large slub causes a break at a point so close to the needle that no stop motion can act in time to prevent a "press-off."

A variety of methods is used to open the latches of circular rib and interlock machines after such a "press-off." Some of them are injurious to the needles; others cause waste fabric to be produced until all drop-stitches, which are the result of closed latches, are picked up. The machine, if a rotating cylinder type, must be stopped several times to insure that stitches have all been picked up.

Time and waste can be saved by fitting to the machine a simple little gadget which can be made in the mill shop in a very short time.

The materials needed are: a length of 3/4" x 1/8" mild steel about 10" long; eight No. 6-32 screws; and one brush of the type used on flat sweater machines to control the latches while the needles are in the clearing position.

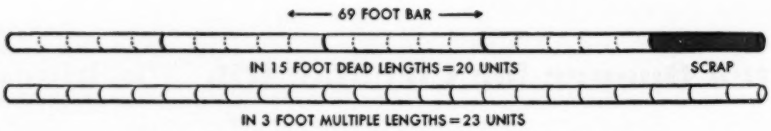
The brush should be cut in half vertically and the brackets cut to size and bent according to the make of the knitting machine. Two slotted holes, 1/8" wide and 1/4" long, are provided for adjustment.

In the opposite end of the bracket two holes are drilled side by side with a 7/64" drill and tapped to take the 6-32 screws. Two clamps 3/4" long, cut from the same material, should have two holes drilled 9/64" in diameter. To prevent the clamp from being squeezed, insert metal spacer (slightly less in thickness than the brush), drilled identical to the 6-32 clearance holes. The brush is held between the clamp and the bracket and should be adjusted so that the bristles of the brush contact the latch spoons as the needles move to the clearing position close to the yarn feeder. Closed latches will be brushed open, provided the brush is adjusted properly.

It is a good plan to close a few latches, cast off their loops, and hold the bracket firmly by hand on the dial cam plate in an approximate position, and if the latches close satisfactorily when the machine is turned slowly, a 7/64"

What you can do to make the supply of Stainless Steel go further

Minimize scrap losses at the mill by ordering the exact sizes that you will use



When you order sheets, plates or bars of Stainless Steel, don't confine your specifications to mere "dead lengths." Such procedure often leads to a waste of material.

Instead, place your orders in terms of *multiple lengths*. In other words, tell your supplier the actual dimension in which you will eventually use the steel. By doing this, you'll often get *extra* units from good steel that otherwise would be consigned to scrap.

For example, suppose you've been ordering 15-foot bars and are using the steel in 3-foot units. If the mill should roll a 69-foot bar, we could cut only four lengths or 20 3-foot units from it. But when ordered in multiple lengths, we could cut 23 units from the same bar, and scrap losses would be minimized.

The same thing holds true when you are ordering sheets, strip, or plates. The more we know how you will use the steel—the actual sizes you are planning to work to—the more chance we have of taking care of your requirements.

Cooperation from all concerned will stretch supplies of Stainless as far as possible. Specifying multiple lengths is one way you can help. (And it's equally important in your orders for alloy steels and plain carbon steels, too.)

Keep these points in mind, too, when you order Stainless.

Tell your supplier exactly where you'll use Stainless and how you'll fabricate it.

Indicate, if possible, acceptable alternates in composition, gage and finish.

AMERICAN STEEL & WIRE COMPANY, CLEVELAND · COLUMBIA STEEL COMPANY, SAN FRANCISCO
NATIONAL TUBE COMPANY, PITTSBURGH · TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM · UNITED STATES STEEL COMPANY, PITTSBURGH
UNITED STATES STEEL SUPPLY COMPANY, WAREHOUSE DISTRIBUTORS, COAST-TO-COAST · UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS

U·S·S STAINLESS STEEL

SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

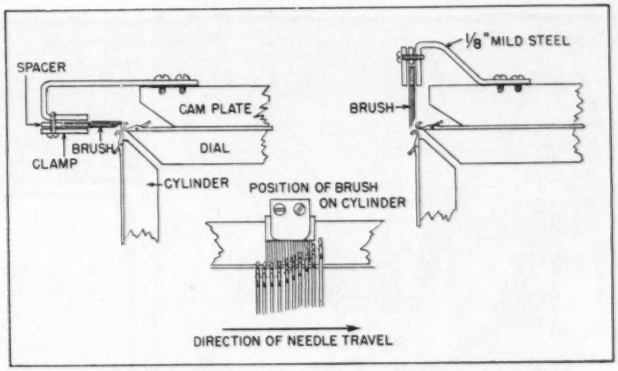
1-583

UNITED STATES STEEL

drill can be entered in the center of the slotted holes to mark the cam plate. This is enlarged afterward by a center punch.

Sketch shows the position for the brush on the cylinder needles. The dial brush would be located in a similar position. Care should be taken to prevent the metal drillings from falling into the slots of the dial or cylinder.

When the brushes wear to an excessive point where the bristles no longer work on the needles, the position of the brush may be reversed to make use of the good bristles. Several of these units may be placed around large-diameter machines.



Observations on Full-Fashioned Machines

EDITOR TEXTILE INDUSTRIES:

In studying full-fashioned knitting machines, and particularly the needles, I have found a number of interesting items which many manufacturers are overlooking in the various mills. In the entire full-fashioned knitting industry, about 75 per cent of the knitters do not know how a straight needle appears, nor how to make a needle appear as it should. This of course is not entirely the fault of the knitter or operator; it simply means that the manufacturer does not take the time to teach them, or they do not care to spend the money necessary to keep the machines in proper condition for best results.

Usually the manufacturer leaves the entire matter of fixing and care of the machines up to the supervisor, and I'm sorry to say that in many instances the supervisors do not know any more about the needles than do the knitters. The hosiery manufacturers often pay supervisors and other personnel high wages to do a job which the personnel does not know how to handle thoroughly. I have learned this through years of experience in the field.

I have worked in two mills in which the needles were recognized as an important factor, and their machines are in first class condition. Of course many other mills may be equally as cognizant of the facts; however the two mills I worked in were especially pleasing to a man who knows what a first class machine should look like to maintain high efficiency and quality.

There is a big difference between an operator and a knitter. An operator simply runs the machine and takes the stockings off the machine so long as the machine produces. Over a period of time an operator's production would probably decrease, because he does not care for the machine properly. Usually the operator relys on the foreman to do part of his work.

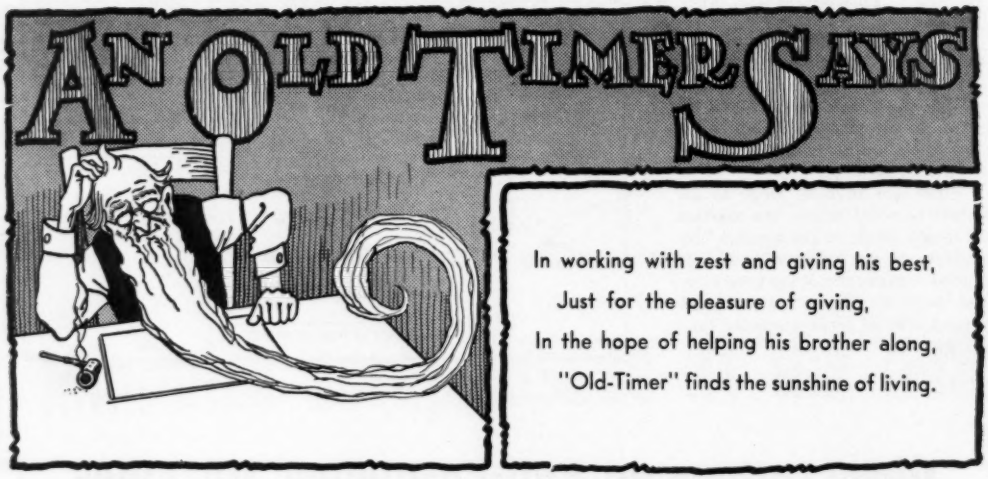
A good knitter will try to keep his needles in first class condition. Also, he attends to sinkers, dividers, knockovers, and at all times keeps the machine clean and free from loose yarn so the moving parts won't be hindered by tangled yarn. A good knitter keeps his machine well oiled, and his pliers are kept in good condition in that they may be considered his most valuable tool.

Narrowing points should not be always pulled forward in the straightening operation. The proper relation of parts should be maintained at all times. A full-fashioned hosiery machine represents a large investment, and it is a bad habit to take short cuts on needed adjustments. It doesn't take long to get a whole machine out of adjustment and run into serious trouble as a consequence. The best practice is to follow the manufacturer's manual when making repairs or adjustments.

Another bad practice often occurs when a hosiery mill expands and needs additional fixers. Oftentimes several knitters are selected for the job, and without any training they are given a screwdriver and a pair of pliers, and then they are told to go to work as fixers. The subsequent results on knitting machines in such mills just is not good business.

When machines are "overhauled" simply by reneedling and ignoring the other parts, satisfactory results cannot be achieved, and first quality fabrics cannot be produced. It is necessary to overhaul various parts of knitting machines at least once every three years if they are kept in operation on a daily production basis throughout the years.

CONTRIBUTOR No. 8373


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

Man Needs a "System" for Everything He Does

Dear OLD-TIMER:

I have not called on you in quite a long time, but something has just happened that places quite a responsibility upon me and I need your advice.

As you know, our mill is one of the "old school," so to speak. That is, my boss is the largest stockholder and has been president since the plant started out with 10,000 spindles in 1915. Now we have over 50,000 spindles, and during this growth in spindleage over a period of more than thirty years, the president has bought the cotton and all supplies to operate the plant. At last meeting of the directors he resigned as president and was made chairman of the board.

The new "set up" calls for a cotton buyer (a man who is cotton buyer for several mills) and several other changes which are intended to relieve the boss of a lot of the detail work he has done for all of these years.

One of these changes is that I am responsible for purchasing all machinery supplies. In fact, anything we buy for the inside of the mill. Not having had any experience in purchasing supplies, I am quite apprehensive of this responsibility.

I realize that with my employer's long experience and his business ability, I have quite a job before me to hold our supplies account down to compare with past records.

Please be as prompt as you can in letting me hear from you, because I am quite sure the management will be watching to see what kind of start I make in taking over this work which has been handled so efficiently by my old boss.

With personal regards,

JIM.

Many OLD-TIMER *readers may know "Jim," and we have had many articles on this page depicting his progress to secondhand, then overseer, and then superintendent. He was one of* OLD-TIMER'S *proteges from the time he was a card grinder. Not having had the opportunity of a college education or even high school, Jim eagerly took up all the self training courses* OLD-TIMER *suggested in these articles and has done quite well for himself. We understand he holds quite a nice block of stock in the mill where he has been all these years, and it is said he is the highest paid superintendent in that section, for that size mill.*

DEAR JIM:

Glad to have your letter and to know you have taken another step up the ladder. Congratulations! I hope to be over in your section some time in the summer and will call by to see if you are as good a pupil as you were when we were trying to help you as overseer and

A second commodity exchange for futures transactions has been opened.

THE ISELIN DIARY, 1871

THE BETTMANN ARCHIVE

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Traditional part in trade is played by our great commodity exchanges. Here merchants "hedge" or protect spot purchases against price changes by making "futures" sales contracts . . . An even longer tradition lies behind Iselin's time-tested Factoring service. Through it, by selling his receivables, the manufacturer can "hedge" his working capital against future credit losses . . . speed its turnover . . . increase its productivity. The stability of our many long-standing clients shows we can help you prosper. Write for booklet on our Factoring service to industry.

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You have a wide choice of shades with deep penetration, uniformity and brilliance—in Du Pont PONSOL* and LEUCOSOL* (anthraquinone-type dyes) and SULFANTHRENE* (indigoid and related dyes). Our Technical Staff will be glad to assist you in choosing the right dye—and the right method of application—for all your fabrics. E. I. du Pont de Nemours & Co. (Inc.), Dyestuffs Division, Wilmington 98, Delaware.

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BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

when you got your first superintendent's job.

Remember how we talked "system" to you. Remember the system we laid out for you for the weave room, because you had never worked in the weave room and, to your surprise as well as to the surprise of your employer, how you raised the efficiency and lowered the supply cost in such a short time? I know you remember that nice Christmas present they gave you as a result of this work.

Yes, we tried every way we knew how to bang "system" into your head, until we suppose you finally got to thinking a man had to have a system for everything he does. And that is just exactly what we do say. An overseer or superintendent who works without a system is comparable to the man who enters the prize fight ring without studying his opponent's past ring history.

Just one or two simple illustrations to the reader and aside from what we have to say to Jim. Such experiences as this one we are relating, sold OLD-TIMER on the idea of systematizing all his work, and although that was more than forty years ago, he finds it works as well today as it did then. Our first overseer job was in a mill of 700 looms, and our salary—no wages—was $3.00 per day. One day the superintendent sent for us to come to his office. He had just received a fire inspector's report which said OLD-TIMER's fire buckets needed water badly. That was the first "call down" we received. OLD-TIMER had only been on the job a few months. In those days overseers kept the time and made out the pay rolls. We simply added to our pay roll (in pencil) "Fire Buckets." We marked Mr. Fire Buckets out every day except Friday, and before we marked him in for Friday we went right out into the room and inspected every darn fire bucket. We were never caught with water low in fire buckets again. We could not forget it because we saw fire buckets on the pay roll every day.

One more little illustration to show how system can be applied to anything. Forty years ago loom head gears were not put on crank shafts as well as they are now. Ours came loose pretty badly and they would run loose for several days before causing the loom to bang-off. Then the crank shaft had to be taken out to install another head gear because the keyway and key would be worn so badly. This caused considerable loss of production as well as running up the supply account.

We simply dated the looms we put new gears in until we determined that they would run about fifteen weeks before starting to come loose. O. K., we required all head gears to be tightened every twelve weeks. A man on a hundred looms must tighten the head gears on eight looms each week. That fixed that.

> GUESS WORK has never solved many manufacturing problems. Prepare yourself by concentrated study of all available information. Keep a cool head—work like heck. Usually it turns out to be not much of a problem after all.—OLD-TIMER.

Know Life of Mill Supplies

Now, Jim, we can assure you there is no need for apprehension on your part about purchases of supplies, if you will systematize every detail about the problem. Here is what we mean: Every overseer and superintendent should know the life of all expendable supplies which are used by all machines in the mill. That is, how many loom hours a shuttle will last—yes, most of you know that. But do you know how many loom hours a check strap lasts—a picker—a lug strap—a harness strap—a jack strap, etc., etc.?

The life of card cylinder clothing—the licker-in clothing—how long a blade picker beater will run before needing to be sharpened—exactly how many hours a comb box on the cards will run before needing additional oil in the box or which oil will give the most running hours in the comb box. Don't you see oil on the floor under the comb boxes in most mills you visit? And oil on the floor under loom pick cams and harness cams. Oil on the floor does not lubricate the machine parts, you know, and it shows pretty poor housekeeping.

Shuttles

In fact, every expendable item in the mill should be recorded so that the working or running hours may be determined. Gosh! You say, that is some heck of a job. Not at all. All you need do is to date everything in the way of supplies which goes on a machine. For example, a single entry ledger of about 100 pages, cost about 40¢, will hold the numbers of all of your looms (about 2000). Call this a shuttle book—and as each shuttle leaves the supply room, enter in the shuttle book opposite the loom number which loom gets that shuttle. Of course you have also dated the shuttle, inside, with ink. In a couple of years your shuttle book would probably look something like this:

Loom Number	3 Shifts					
600	1/ 3/49	4/10/49	7/28/49	11/15/49		
601	3/ 1/49	6/15/49	12/ 1/49			
602	2/25/49	6/11/49	11/11/49			
603	4/ 4/49	7/21/49	7/30/49	8/18/49	10/12/49	12/30/49
604	2/10/49	7/14/49	12/22/49			
etc.						

A glance at your shuttle book will always show you the looms which should be checked to see why certain looms are using more shuttles than others. For example, loom No. 603 has used six shuttles while about four shuttles is the average or about 2000 loom hours. If you are using shuttles from two or more shuttle manufacturers, this system will soon show you which shuttle lasts longest or gives most loom hours.

In the foregoing case, with about 2000 loom hours per shuttle, your 2000 looms would produce 4,000,000 shuttle hours. If you are paying about $3.00 for your shuttles, then a simple calculation will give you the cost per loom hour for your shuttle expense.

Example: 2000 shuttles at $3.00 each equals $6000.00; 2000 looms at 2000 hours life of each shuttle equals 4,000,000; $6000 divided by 4,000,000 equals .0015.

Now this establishes the loom hour cost of this manufacturer's shuttle; therefore you are in a position to try out another make of shuttle for a couple of years and determine which is most economical. (Note: the foregoing figures are not taken from actual records but are set up to give you the idea as to the system you should use.)

(*Continued next issue*)

$C_6H_5CH_2OH$

BENZYL ALCOHOL

FROM

TENNESSEE

Research in the development of products, processes and plant operation is a customer bonus when you buy chemicals from Tennessee. Research-built plants are producing better chemicals from mines and forests; quality controlled until packages are sealed for shipment.

If you have a chemical problem, one that practical research can solve, then you should see the men from Tennessee.

TENNESSEE PRODUCTS & CHEMICAL *Corporation*
NASHVILLE, TENNESSEE

Portable Dehumidifier

(*Continued from page 91*)

home basements to vaults and storage lofts. It weighs only 60 pounds and is fitted with casters and handholds so that it can be easily moved wherever needed. Unit can be plugged into any standard 115-volt circuit. Under conditions of 80 F and 70% relative humidity it is capable of removing as much as 18 pints of water from the air in an average space every 24 hours. Enclosed in attractive, flat-topped, rectangular cabinet, measuring 23½" high, 17½" long, and 13½" wide. Condensed moisture can be disposed of through nearest drain by attaching a piece of rubber tubing to the drip pan spout. Removable condensate pail provided with unit.

Carrier Corporation, Syracuse, N. Y. (F-203).

NEW Equipment AND MATERIALS

Note: Other items are described on pages 89 and 91

Humidity Conditioning at the Frame

Displayed at the Knitting Show

A new system to maintain high humidity in between the spools and to evacuate accumulated heat from the spindles is being tested under production conditions by an eastern mill in which filament synthetics are processed.

As shown by the accompanying sketch, humid air is discharged between the spindles, thereby contacting the yarn. Preliminary tests on single frames indicate successful application, it is reported. At present the mill is making a quantity installation. Working conditions between frames are said to be improved because of constant circulating and change of air.

When the mill tests have been concluded, based on the entire installation, a progress and equipment performance report will appear in TEXTILE INDUSTRIES.

Air - Perme - Ator Manufacturing Company, 300 Preakness Ave., Paterson 2, N. J.

Booklets on Safety

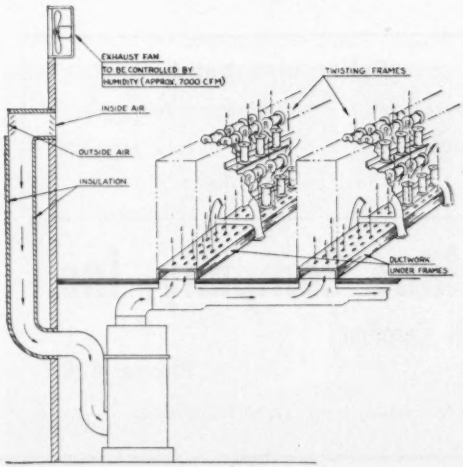
Four new booklets on safety, designed for distribution by plant foremen or as payroll enclosures, have been announced by the National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill. They cover safety in the plant, at home, and on the road. Humorous cartoons and light treatment in the text "sugar-coat the message." Samples available.

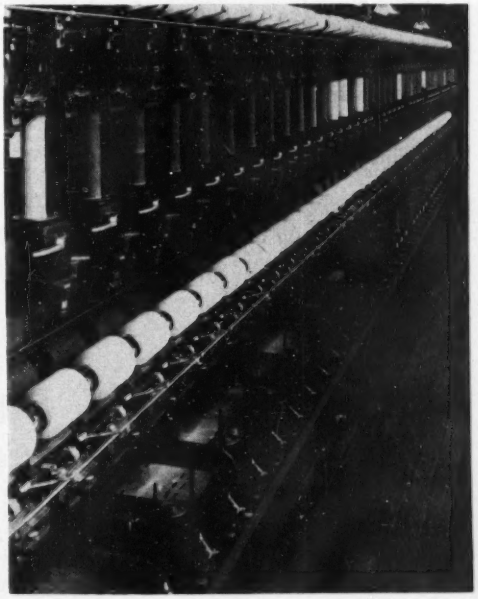
Hosiery Transfer Machine Has Double Roll Holder

A double roll holder which speeds the change from one application to another, selective speed control on front, switch on iron for heat control, quick-change iron, and simplified operation are features claimed for an all-metal transfer machine now being produced.

Designated the "Paramark," both the women's hosiery machine and the half hose and anklet machine are available in one size, 30" x 48"; top is stainless steel. A suction grille on

AIR-PERME-ATOR apparatus on twister is shown in the photo at the right. Sketch below shows how air is discharged between the spindles, maintaining high humidity around spools and evacuating accumulated heat from the spindles.





There is a SYKES Cloth Inspector *Tailored to* YOUR *Job and* YOUR *Budget*

Model No. 200 N

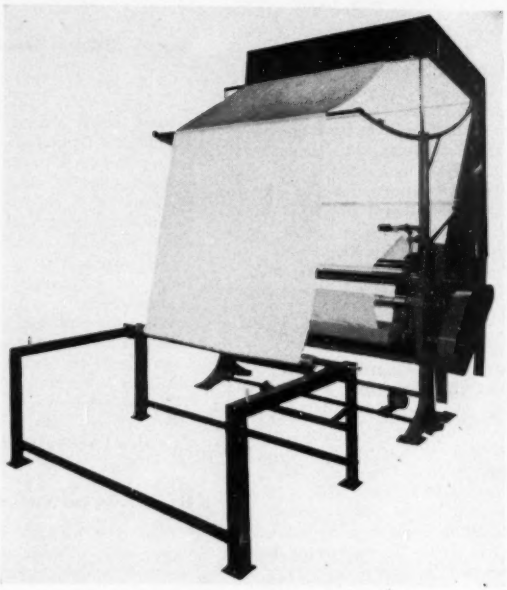
SYKES

Sykes builds 20 different types of cloth inspection machines, each designed to do a particular job in your mill.

The Sykes No. 200 N with lighting encasement is a Constant Speed inspecting and measuring machine and is the ideal machine for inspecting cotton, rayon, nylon or plastic materials.

Sykes inspecting and measuring machines are standard equipment in many of the country's largest mills.

Let us know your requirements.



★

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with

Sykes Cloth Inspectors

★

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Burlington, North Carolina

P. O. Box 1178 **Phone 4281**

We also build inspection tables to your own specifications.

"Paramark" hosiery transfer machine by Paramount.

the men's machine holds goods stationary.

Operator may stand or sit, touching front control bar if standing, or knee-operated switch if seated.

Paramount Textile Machinery Co., 131 S. Wabash Ave., Chicago 3, Ill.

For additional data, request item F-501, using business reply card on page 218.

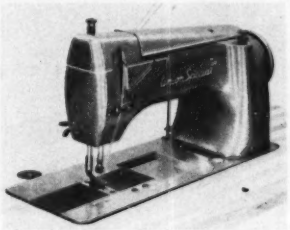
New Lockstitch Machines

Two new classes of needle-feed lockstitch machines are on the market. One, a single-needle machine, is identified as Class 61800; the other, a two-needle machine, is designated Class 62200. Both machines produce stitch Type 301 and are being manufactured in styles suitable for use on light and heavy weight work.

Streamlined in design, the machines are constructed with vertical type hooks. Separate oil reservoirs are provided for each hook and for the main gear case from which lubrication is automatically supplied for the entire lower mechanism.

The hook and hookshaft have been designed so that the removal of the hook does not require a retiming or resetting of the hook point when it is replaced in the machine. The hook mechanism also contains a mechanical opener.

Pressure of the presser foot is applied by an enclosed coil spring and



The Union Special Class 62200 two-needle lockstitch machine which produces a Type 301 stitch and is suitable for light and heavy weight work.

is adjusted by a readily accessible thumb screw. The presser foot lifter mechanism is enclosed, as are the thread controller and tension discs.

Union Special Machine Co., 407 N. Franklin St., Chicago 10, Ill.

For additional data, request item F-102, using business reply card on page 218.

NEW Equipment AND MATERIALS

Compartment Type Open Soaper or Washer

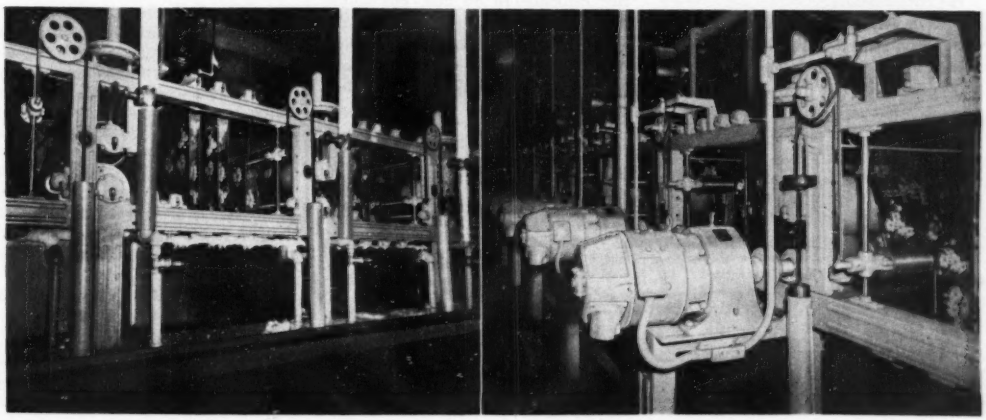
Finishing plant experience with a new compartment type open soaper or washer is reported to be highly satisfactory. When the unit was installed, the mill management had hoped to increase productive efficiency of their soaping range by approximately 50%. Now, after six months of operation, a 100% increase is claimed, with a wide variety of fabrics being processed at speeds from 90 to 125 yards per minute.

Cloth is fed to the machine through a set of guides and draw rolls to the first bowl. It progresses through vertical passes over stainless steel top and bottom idler rolls, then over a curved rubber expander to the main nip rolls. These can be furnished with either three or five-ton pressure.

The bottom roll is of centrifugally cast stainless steel, and the top roll is rubber covered to any density required. These main squeeze rolls, as well as the idlers, are rigidly supported in a cast iron frame which is entirely independent from the stainless steel bowl itself. Both top and bottom bearings of the squeeze rolls are so designed that either roll may be removed without removing the other. Bottom idler rolls are held independently of the stainless steel bowl, and parts which must be aligned are not attached to the tub itself.

Tanks are fabricated from Type

Two views of the compartment type open soaper or washer recently announced by James Hunter Machine Co.



It's a combination, designed by Dixon engineers, to reduce oiling time and labor costs . . . to promote economical, continuous and dependable saddle operation in long draft spinning.

The Slixonice back saddle incorporates special, long-lasting, low-friction plastic bearings instead of cast iron. After a long period of use, only the plastic inserts need be replaced — not the entire saddle.

When used on either H & B, Whitin or Saco-Lowell long draft systems, back roll lubrication and the danger of oil-soaked yarn are completely eliminated. The streamlined design of the Slixonice saddle reduces lint accumulation and permits accurate control of roll speed and weighting.

Use of the Lubronze bearing in the Dixon front saddle reduces front roll lubrication to a minimum. The bronze insert is impregnated with graphite, oil and other materials to provide a smooth bearing surface, low friction and a reserve of lubrication for extra protection.

See your Dixon representative for full information on how old saddle types can profitably be replaced by the Dixon Slixonice-Lubronze combination. It will also be well worth your while to ask him about the complete Dixon line of saddles and saddle assemblies.

SOUTHERN SALES:
R. E. L. Holt, Jr. & Associates, Box 1474, Greensboro, N. C.
Covering the Carolinas and Virginia
J. W. Davis, Mfg'rs. Agent, Box 745, Columbus, Ga.
Covering Georgia, Alabama, Mississippi, Louisiana and Tennessee
NORTHERN SALES:
W. R. Potter, Sales Manager, Dixon Lubricating Saddle Co., Bristol, R. I.
Covering New England

FOR 75 YEARS 1876 DIXON SADDLES 1951 HAVE COST SO LITTLE AND SAVED SO MUCH

DIXON LUBRICATING SADDLE CO.
Established 1876 BRISTOL, R. I.

NEW Equipment AND MATERIALS

316 SMO stainless steel, and all corners and bottoms are rounded for ease in cleaning. A skimmer trough is furnished in each tank to clear away sludge or other foreign matter removed from the cloth.

Bottom idler rolls in first two compartments are solid stainless steel tubes, and in balance of machine are specially constructed reels which agitate the cloth, loosening gums and increasing scouring efficiency.

Pressure on main rolls is supplied through Stabiliflo motors, the control for which is located in the casting which supports the main roll bearings. Final squeeze is accomplished through a heavy set of pneumatically controlled 18" squeeze rolls which operate from 10-15 tons pressure. Cloth then goes through a compensating gate and is delivered to a set of dry cans.

James Hunter Machine Co., North Adams Mass.

For additional data, request item F-502, using business reply card on page 218.

Raschel-Tricot Warp Knitting Loom

Displayed at the Knitting Show

The Premier knitter is a Raschel-tricot warp knitting loom, incorporating in the basic Raschel design many features utilized by the tricot machine. These features include tricot-type cams; fine gauge up to 24 needles per inch, and for two-bar operation, high operating speeds approaching that of the tricot.

The Premier knitter may be used to produce the usual full range of fabrics and patterns made with Raschel machines. Utilizing up to six guide bars, this machine can knit at speeds more than double that of the prewar Raschel machines.

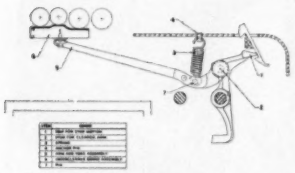
Two models are offered: single needle bar; and double needle bar. Both models are furnished in 18, 24, and 36 Raschel gauge—9, 12, and 18 needles per inch respectively. Machines can be converted from a single needle bed to a double needle bed or from double needle bed to single needle bed.

Premier Textile Machinery Co., Inc., 440 Mercer St., Jersey City, N. J. (F-503).

Reciprocating Underclearer for Drawing Frames

A reciprocating underclearer which may be furnished on new drawing frames or installed on frames already in the mills is being manufactured for four-roll and five-roll drafting arrangements. It cleans the rolls by a wiping action and retains the accumulation of waste by a felting motion caused by the oscillation of the clearer cloth against the surface of the rolls.

The device is composed of a board curved to contact each set of rolls



Sketch of clearer arrangement on four-roll drawing (Saco-Lowell).

at all times during the traverse and is supported by a pivoted rocker arm. The rocker arm is driven by the oscillating shaft of the stop motion which gives the clearer its reciprocating motion.

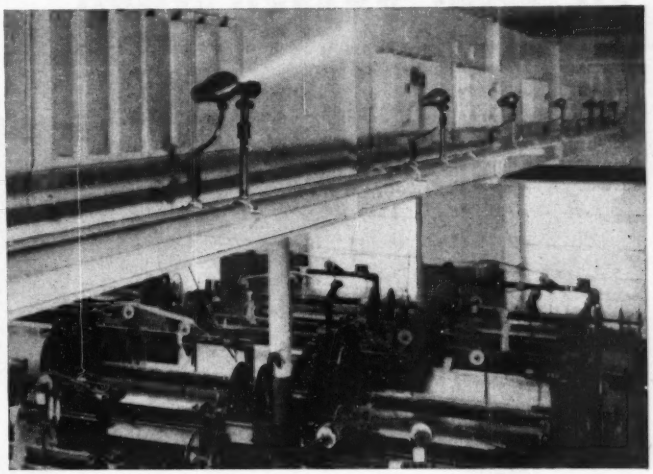
Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass.

For additional data, request item F-301 using business reply card on page 218.

Clamp Device Handles Heavy, Bulky Loads Without Pallets

An "Extra-Heavy Duty Clamp" for handling heavy, bulky loads without pallets is available for use on Clark Utilitruc models, both gas and electric powered with capacities up to 7000 pounds, and on the Clark Yard-lift-60, gas-powered pneumatic-tired 6000-pound model. It is similar in design to the standard heavy duty clamp marketed by Clark, except that it is more ruggedly built with heavier slide arms and guides to permit increased arm travel. Suitable for handling bales, large boxes, crates, and other bulky units able to withstand the heavy squeezing. Clamping pressures up to 6000 pounds at the heel of the arms are available. Clamp is hydraulically operated. It has handled six bales at once. Clamp arms can be extended from a minimum opening of 24 inches to a maximum opening of 95 inches. Overall

You ought to know more about this Humidifying System



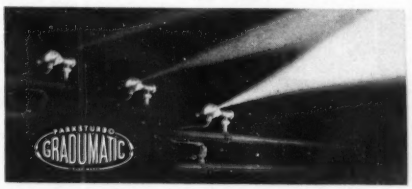
The GRADUMATIC humidifying system, shown to the trade for the first time at the American Textile Machinery Exhibition last May and tested and tried for five years prior to that, has fully demonstrated its value both alone and in combination with Certified Climate Airchangers or as boosters for Central Station equipment.

Unlike all previous fixed capacity "on and off" systems, the Gradumatic system delivers fog-like moisture continuously in balance with room demands. Each atomizer has a variable capacity of from 2 to 16 pounds per hour, eliminating over- and under-humidifying.

The AIRCHANGER provides adequate ventilation and circulation, maintaining uniform temperature and humidity conditions, and insuring maximum evaporative cooling.

The new gradual-acting Certified Climate Psychrostat makes all this possible. Sensitive, rugged, reliable.

More accurately controlled atmospheric conditions could help in your mill by making yarn stronger and more pliable, by increasing production and improving quality in all departments, by making the atmosphere more comfortable and healthful.



Parks-Cramer Company

Fitchburg, Mass. Charlotte, N. C.

PARKS Certified Climate

USTER Tying Speeds Production on Vital Cotton Duck

Beams run out faster when you weave cotton duck. Loom down time becomes an important factor in production when more warps have to be tied daily. The "Uster" Warp Tying Machine saves 30% to 70% on tying time . . . and on down time, and saves on man hours besides. If you run cotton duck or other heavy defense materials, investigate the production-increasing and labor-saving advantages of the "Uster" today.

how Equinox Mill does it!*

The "Uster" at the left is just beginning to tie a previously prepared pattern. Operator at the right is beginning to prepare a second pattern.

Pattern at left is ready for weaving and the "Uster" is beginning to tie the second warp at the rate of 250 knots per minute.

*Using 4's to 11's (3 ply 12's and 2 ply 22's) weaving 8-10-12 oz. Army Duck. Their "Uster" ties 27 to 30 patterns of 3,200 ends a day. Although the number of looms in place has been increased 18%, the "Uster" Warp Tying Machine has saved the time of three people.

- **Ties the entire warp at one "bite"**
- **Precision Mechanism of unmatched speed**
- **Compact — Convenient — Versatile**

In Canada: Hugh Williams & Co., 47 Colborne Street, Toronto, Ontario

USTER CORPORATION, CHARLOTTE, N. C.

80 Boylston Street, Boston 16, Mass.

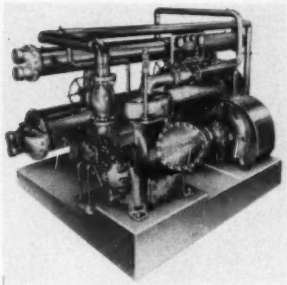
NEW Equipment AND MATERIALS

width of assembly with arms closed is 67 inches. Not detachable.

Clark Equipment Co., Industrial Truck Div., Battle Creek, Mich. (F-504).

100 and 150 hp Reciprocating Refrigeration Machines

Two models of reciprocating refrigeration machines specifically designed for air conditioning and refrigeration use in the 100 to 150 hp range are available as a complete package with compressor, cooler, and condenser, and all interconnecting piping, fittings, safety and capacity controls, gauge board, and cooler and condenser stands included. Designated as the Carrier 30 B, it is said to be particularly suitable for chilling water for air conditioning purposes, and is readily adaptable to many industrial requirements, including direct product cooling, brine chilling, and ammonia and chlorine condensing. It is said that unusual compactness of assembly reduces pressure loss to minimum, guarantees better overall performance, and permits wide range of applications where space is critical.

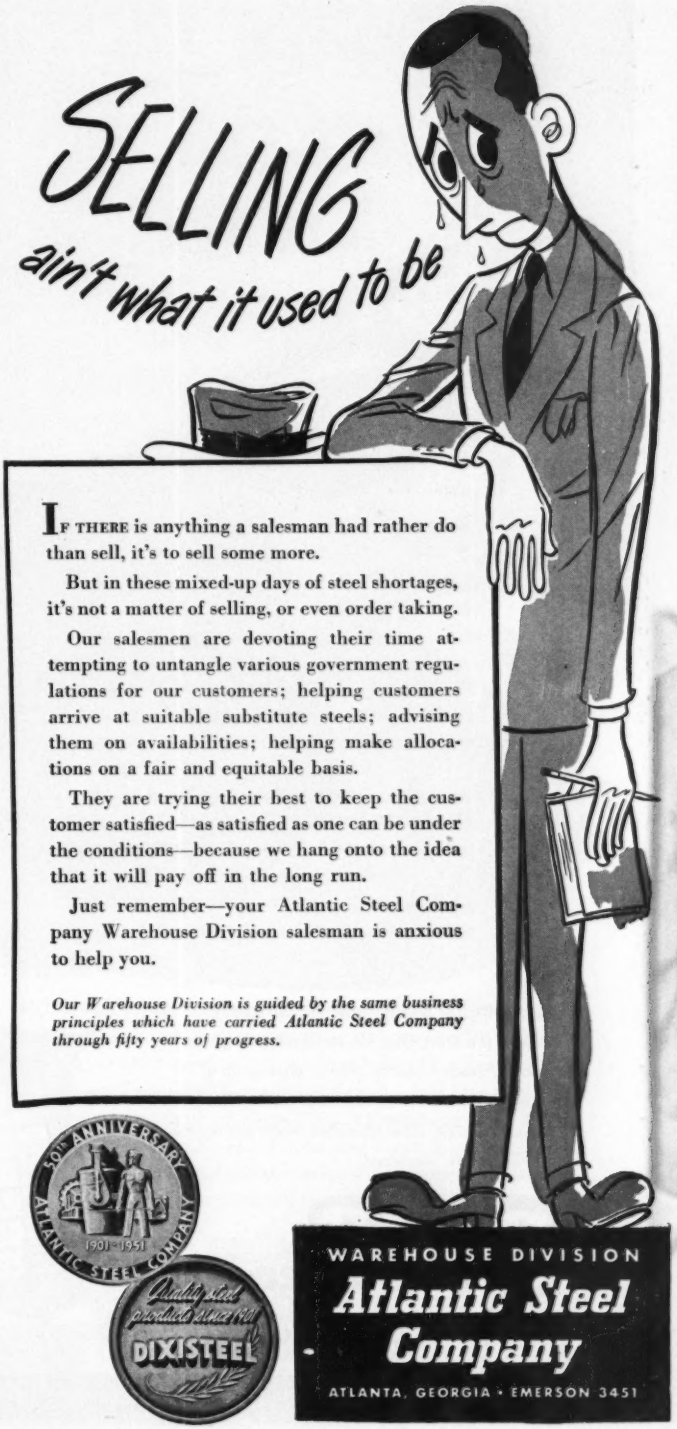


Carrier 30 B reciprocating refrigeration machine.

Carrier Corporation, Syracuse, N. Y. (F-209).

Assistant for Use with Metallized Dyes

Emery 955 Dimer Acid (dilinoleic acid) is a liquid, dibasic acid, viscous in nature, with an apparent molecular weight of approximately 600, according to the manufacturer's announce-


SELLING
ain't what it used to be
IF THERE is anything a salesman had rather do than sell, it's to sell some more.
But in these mixed-up days of steel shortages, it's not a matter of selling, or even order taking.
Our salesmen are devoting their time attempting to untangle various government regulations for our customers; helping customers arrive at suitable substitute steels; advising them on availabilities; helping make allocations on a fair and equitable basis.
They are trying their best to keep the customer satisfied—as satisfied as one can be under the conditions—because we hang onto the idea that it will pay off in the long run.
Just remember—your Atlantic Steel Company Warehouse Division salesman is anxious to help you.
Our Warehouse Division is guided by the same business principles which have carried Atlantic Steel Company through fifty years of progress.
50th ANNIVERSARY
ATLANTIC STEEL COMPANY
1901 - 1951
DIXISTEEL
WAREHOUSE DIVISION
Atlantic Steel Company
ATLANTA, GEORGIA • EMERSON 3451

Nothing sells like beauty! And for the beauty in hosiery it's the DURA BEAU *finish that gives the smooth, smoky-dull allure—a plus-value of increased resistance to snags, runs and spots. That's why* DURA BEAU*-finished stockings outsell, by far, all others combined.*

DuraBeau

Reg. U.S.A. and Canada

TEXTILE FINISHES

SCHOLLER BROS., INC. • Manufacturers of Soaps, Softeners, Sulphonated Oils and Finishes • Collins & Westmoreland Sts., Phila. 34, Pa. • St. Catharines, Ont., Can.

NEW Equipment AND MATERIALS

Powerful Bale Breaker

A new bale breaker will take highly compressed bales of cotton linters and tear them apart, ready for processing, the manufacturer claims.

Bales are brought to the feed conveyor, which pushes them against a revolving head. The material is torn apart and opened up by projecting teeth.

The machine illustrated has a throat 36" wide and the head diameter is 24". It is made in sizes up to a 72" throat and head diameter of 42".

Taylor, Stiles & Co., Bridge St., Riegelsville, N. J.

For additional data, request item F-107, using business reply card on page 218.

ment of its commercial availability. It is said to have excellent heat stability and low volatility; undergoes the carboxyl group reactions typical of a monomeric acid; its polyfunctional nature allows polymerization, resinification, or similar type reactions with polyalcohols, polyamines, polyvalent metals, etc. Regarding textile applications for the product, it is claimed that ethoxylated derivatives of bis-alkylol amides of Dimer Acid are particularly valuable assistants in dyeing processes employing metallized dyes.

Emery Industries, Inc., Carew Tower, Cincinnati, Ohio (F-204).

Bales of Dynel Fiber Now Weigh 350 Pounds

Standard dynel shipping bales have been increased in size to contain 350 lb net of fiber, effective May 1, 1951. This increase in bale weight from 300 lb is a part of a program to reduce freight and handling expenses, according to the announcement.

Spinners of dynel yarns are being cautioned that this change in weight may mean that the steel baling straps are under increased tension, and workers concerned with bale-opening must be careful when cutting the straps.

The overall width, length and

You can't jam the new RIDGID 65R

Right Here is the simple device that makes 65R automatically *JAM-PROOF*.

● You don't have to watch it—lead screw can't jam on workholder. New jam-proof drive plate automatically kicks out driving ratchet pawl when standard length thread is cut. Your recent model 65R easily converted—just buy new drive plate, put in place of old plate. Perfect threads on 1" to 2" pipe with one set of 4 high-speed steel dies—sets to pipe size in 10 seconds, mistake-proof self-centering workholder sets instantly! Buy the new jam-proof RIDGID 65R at your Supply House.

RIDGID

★ Work-Saver Pipe Tools ★

NEW "LIFETIME" DYE-TUB THERMOMETER

...as easy—
to read at 70°
and 130°
as at boil

No matter whether you are dyeing naphthols, vats, or acid colors, you can always be sure of accurate dye temperatures with the new Foxboro "Lifetime" Dye-Tub Thermometer. Five-inch dial features 10¾" *uniform scale* — can be read with equal ease and accuracy at all temperatures in its range.

Specifically designed for dye-tubs, this thermometer is also ideal for scouring, rinsing, and other uses. Completely protected against corrosive liquids, fumes, and vapors. Aluminum alloy case is vapor tight. Bulb and capillary are one continuous welded assembly of type 316 stainless steel. Strong, flexible ⅛" capillary is damage-proof . . . even tougher than conventional capillary plus protective tubing!

Why not improve your operation with the new Foxboro Dye-Tub Thermometer? Now available from stock. Write for complete details. **The Foxboro Company, 486 Neponset Ave., Foxboro, Mass., U.S.A.**

FOXBORO
REG. U.S. PAT. OFF.

RECORDING · CONTROLLING · INDICATING
INSTRUMENTS

FACTORIES IN THE UNITED STATES, CANADA AND ENGLAND

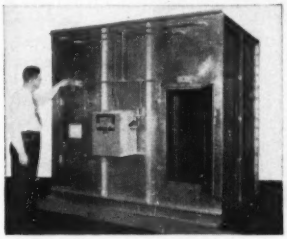
height of the new bales will remain essentially the same as before, approximately 28x54x42 inches. The fiber is packed into corrugated paper cartons, then baled, for protection against contamination.

Textile Fibers Department, Carbide and Carbon Chemicals Division, Union Carbide and Carbon Corp., 30 East 42nd St., New York 17, N. Y.

For additional data, request item F-112, using business reply card on page 218.

Electronic Air Cleaner Available as Package Unit

An electronic air cleaner that resembles a factory-fabricated section of air duct or plenum chamber 96 inches long with a built-in Precipitron is now on the market. The complete air cleaning package, designated the Type PE Encased Precipitron, assures minimum installation time and expense with maximum air cleaning



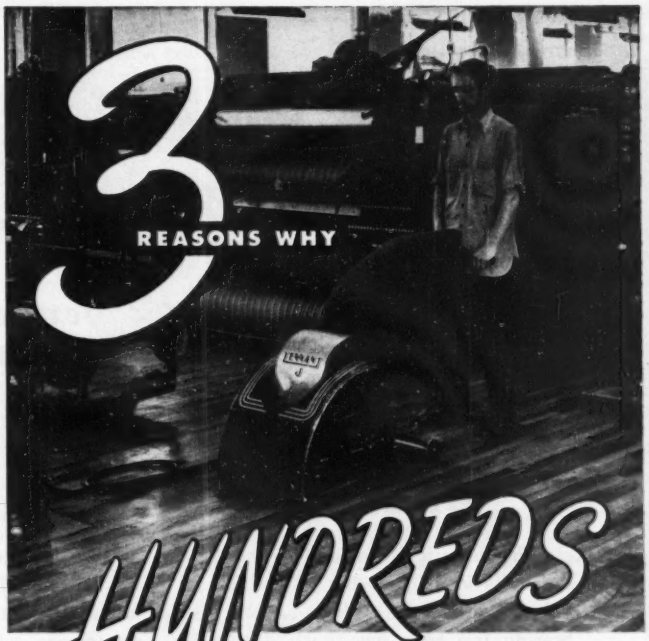
Type PE Encased Precipitron (Westinghouse).

efficiency. Available in air cleaning capacities ranging from 8330 cfm at 90% efficiency to 44,000 cfm at 85% efficiency. Dimensions: 8330 cfm unit, 5′ 4 11/16″ high by 5′ 2½″ wide; 44,000 cfm unit, 10′ 4 11/16″ high by 11′ 1¾″ wide. All units are 8 feet long. Shipped disassembled. Start-up inspection provided by manufacturer.

Westinghouse Electric Corp., Sturtevant Div., 200 Readville St., Hyde Park, Boston 36, Mass. (F-201).

Automatic Batch Counter

Continuous automatic counting of preselected batch quantities at high speed without interrupting produc-



OF MILLS USE THE TENNANT *System* OF FLOOR MAINTENANCE

Its cost-saving performance and ease of use have established TENNANT as *THE accepted floor maintenance system of the U.S. textile industry.* This unique acceptance is due to these practical advantages . . .

1. CUTS FLOOR MAINTENANCE COSTS

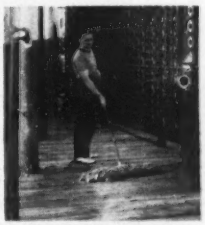
You save 4 ways—in *manhours,* by cleaning faster in one operation with 1 man; you cut *accident costs* by DRY-cleaning (no wet, slick floors). You avoid needless *floor repair costs* . . . and reduce *stock losses* from snags, splinters and soilage.

2. EASIEST TO USE: eliminates scrubbing!

Works like magic! You get rid of dark, rough, oil-soaked fibers . . . and have a smooth, bright, *hardened* floor surface that resists dirt. Stays clean longer! Ends costly, harmful scrubbing and wet-mopping.

3. FITS YOUR MILL'S SPECIFIC NEEDS

Your TENNANT System is individually selected and planned, 100% *specialized* for your mill. Assures you of best results. Personal installation and periodic inspection . . . *without charge.*



ONLY DAILY CARE needed is fast, low cost sweeping. Oil, dirt and dust do not cling to the smooth, hard surface of a **Tennantized** floor. Dirt sweeps off easily . . . Keeps your floor bright and attractive.

OFFICES IN PRINCIPAL CITIES

G. H. TENNANT CO.
2524 No. 2nd Street
Minneapolis 11, Minn.

TENNANT Established 1870

Write Today!

Get helpful case histories, illustrated bulletins, etc. Learn HOW YOUR MILL CAN SAVE ON MAINTENANCE COSTS . . with the Tennant System.

FLOOR MAINTENANCE SYSTEM

Creators of the TENNANT SYSTEM OF FLOOR MAINTENANCE—Manufacturers of Equipment & Materials for MAINTENANCE OF FLOORS, DECKS, ROOFS, HIGHWAYS

COTTON ROVING AND SPINNING

WOOL AND WORSTED SPINNING

SYNTHETICS AND BLENDS

In every branch of the Textile Industry

THERE'S A NEED FOR

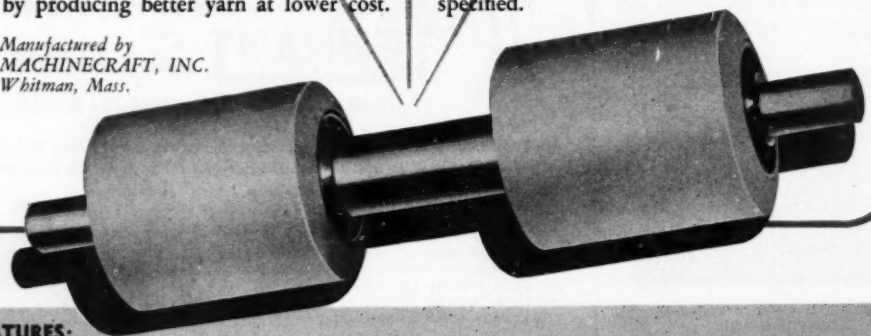
WHITIN-CLIMAX*

BALL BEARING TOP ROLLS

Enthusiastic testimonials from leading mills in all branches of the textile industry prove that Whitin-Climax ball bearing top rolls pay quick dividends by producing better yarn at lower cost.

Whitin has adopted these rolls as standard for cotton roving and spinning, wool and worsted spinning and American System equipment, when anti-friction rolls are specified.

* *Manufactured by*
MACHINECRAFT, INC.
Whitman, Mass.



FEATURES:

1. Reduction in oiling costs
2. Elimination of ends down when starting machine
3. No oil drip or stains on cots
4. No oil stained fibers
5. Perfect rotating synchronization of top and bottom rolls
6. Improved yarn quality
7. Improvement of fiber control in drafting zone
8. Reduction in roll picking
9. Eliminates lapping of lint on journals
10. Less machine down time
11. Elimination of wear on cap bars and saddles
12. Precision manufacture permits easy interchange of parts
13. Available with standard coverings, as specified

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANSBURG, S. C. • DEXTER, ME.

tion and without missing a single count is achieved by an improved automatic batch counter now being produced. Called the Monitor Automatic Batch Counter, it automatically operates a built-in batch control switch at completion of each batch count and at the same time readjusts to start counting the next batch quantity. May be used to start or stop electrically operated machinery, conveyors, signals, chute gates, pile changers, kick-out devices or other arrangements for marking or separating batches, warning operators, etc. May be located at any distance from actual source of count. Self-contained.

Production Instrument Co., 710 W. Jackson Boulevard, Chicago 6, Ill. (F-210).

Three-Groove S-L Tester for Worsted Sliver

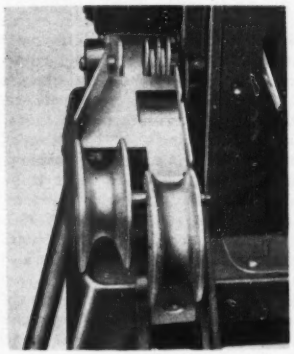
Now on the market is a second type of Saco-Lowell Sliver Tester—a three-groove machine which has an increased range up to approximately 320 grains per yard, permitting it to be used to test worsted sliver.

The two-groove model that has been available for several years was designed for testing cotton and synthetic yarns only where the weight of the sliver is not over approximately 90 grains per yard.

The minimum sliver weight is approximately 10 grains for either instrument.

The three-groove machine differs

Close-up of three-groove tester for worsted sliver (Saco-Lowell).



1901-1951

50th Anniversary

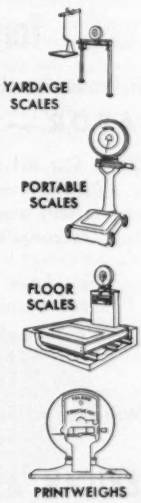
Today, more than ever, you can look to

TOLEDO

to guard your costs better!

After you've fought the battle of high costs and shortages—don't waste textile materials through careless handling! Tighten your control at every step! See that you have up-to-date scales—and enough scales—throughout your textile handling operations. Look into the advantages of Printweigh in stopping losses that originate through human errors. Whatever your problems in receiving, production, shipping, stock rooms and many other textile weighing operations . . . there's a modern Toledo to do a better job.

Today in your community you'll find Toledo as near as your phone; Toledo sales and service offices in more than 200 cities ready to help you in the selection or maintenance of scales vital in guarding your materials and costs.



Write for a copy of our 50th Anniversary Brochure . . . helpful information on modern Toledo equipment.

TOLEDO SCALE COMPANY

TOLEDO, OHIO . . . Toledo Scale Company of Canada, Ltd., Windsor, Ontario

HEADQUARTERS FOR SCALES

from the two-groove tester in that it has a third groove ½" wide, in addition to the standard 1/16" groove for roving and ⅛" width for sliver, of the two-groove device. That third groove is used for testing the heavy grist of worsted top.

Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass.

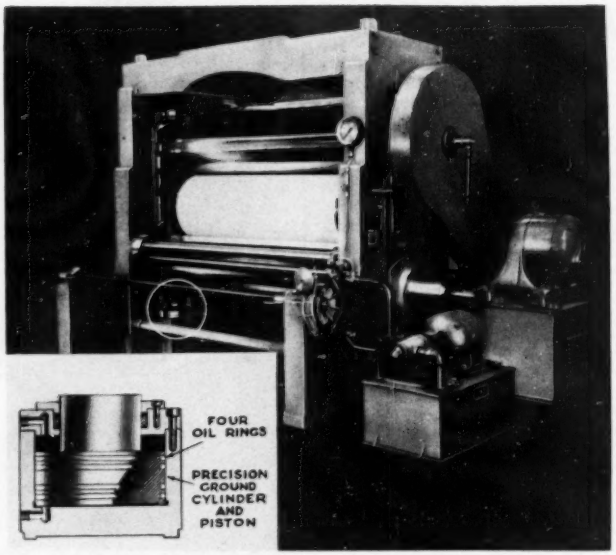
For additional data, request item F-302, using business reply card on page 218.

80-Ton Hydraulic Calender Improved by Van Vlaanderen

The following changes in the hydraulic system of the Van Vlaanderen 80-ton calender are reported to have virtually eliminated maintenance necessitating costly down-time for repairs:

The hydraulic system has been redesigned in two ways.

The cylinders and the pistons have been enlarged to maintain an 80-ton nip pressure at an oil pressure of only 770 pounds per square inch, instead of the 2000 pounds as previously required.



Van Vlaanderen 80-ton hydraulic calender. Inset shows details of improved pressure cylinder design.

The design of the pressure cylinder unit has been greatly improved, doing away with the necessity of periodic disassembly for replacement of the old type ram packing. This was accomplished by building the entire cylinder unit of forged steel with accurately machined cylinders and pistons and using four step seal piston rings.

Van Vlaanderen Machine Co., 370 Straight St., Paterson, N. J.

For additional data, request item F-113, using business reply card on page 218.

Are You Getting a Fair Day's Work for a Fair Day's Pay?

As Production Engineers we specialize in the utilization of

LABOR — EQUIPMENT — MATERIAL

Our list of clients reads like the Blue Book of American Manufacture, and in our files are many expressions as to our service and results accomplished, like the following:

"We have employed on various occasions the services of American Associated Consultants. We have always found their work satisfactory."

A LARGE KNIT GOODS CONCERN

Write for a free copy of "Labor and Management Benefit by Industrial Engineering Principles."

AMERICAN ASSOCIATED CONSULTANTS, Inc.

D. S. KEOGH, President
J. J. SKELLY, Vice Pres. and Gen. Mgr.

H. B. CRAFT, Vice President in Charge of Southern Operations

250 PARK AVENUE
NEW YORK 17, N. Y.

GRANT BUILDING
PITTSBURGH, PA.

30 CAMDEN ROAD
ATLANTA, GA.

Circular Hosiery Knitters By Hemphill

Displayed at the Knitting Show

Solid color argyle hose with overplaid patterns may be knitted on a circular knitting machine designated Model SCOP-55. The manufacturer anticipates delivering some of these machines sometime in 1952.

Model DRCS is a dial rib cushion sole sock machine which knits true rib socks without a hand transfer. It is a 4-inch single-cylinder, 108-needle machine with a production capacity of about 5 dozen pairs in an 8-hour day.

Model NSKW-53 has been designed to produce men's plaited fine gauge half hose with wrap patterns and

without flash or vertical stripes when knitting with high contrast yarns.

Model SCP-51 is an 84-needle machine, built to produce socks of the same type as hand-framed argyles. This machine operates at the same speed as the 108-needle model, requires fewer stitches because of the heavier yarn, and is expected to increase production on solid color patterns.

Hemphill Company, Pawtucket, R. I. (F-505).

"Labricator" for Treating Nylon Yarns

Displayed at the Knitting Show

The Labricator is a technique of applying a specially prepared solution to treat all sized or unsized nylon yarns. According to the company, in full-fashioned production only one wetting solution is used in treatment of all yarns where the Labricator is employed; uniform tension is maintained; self-cleansing operation; easy to thread machine for use; no external contamination or bacterial growth; reduces wear on carrier tubes, according to the manufacturer.

Reading Testing Laboratories, Products Division, 245 Poplar St., Reading, Pa. (F-506).

New Cotton Opener Developed by Saco-Lowell

At the spring meeting of the American Society of Mechanical Engineers, held at the Atlanta (Ga.) Biltmore Hotel, R. S. Curley of Saco-Lowell Shops, Biddeford, Maine, described an opener for cotton which is reported to not only beat out the heavy impurities but will in the same cycle float out those impurities which are lighter than average. According to Mr. Curley, the machine is now being prepared for production and will be known as the Trash Ejector.

It comprises four special beaters arranged one above the other, making a four-high vertical machine. Between each beater and between the inlet and outlet there is placed an adjustable cut-off. The beaters are arranged with grids 45 degrees above and below the center. There is between these sets of grids a perpendicular flat grid which takes up the remaining space. These grids thus go down one side of the machine, around under the bottom beater, and up on the opposite side of the delivery at the top.

There are arranged dust bins on each side of the grids with sufficient space to take care of the air currents and the dust and dirt removed. There are angle plates set close to the grids to break up the air currents and to cause the dirt thrown out by the grids to fall away from the grid bars below. These dust bins are arranged with openings to the outside so that the air pressure within the machine is the same as that in the room.

The grids are flat steel bars so arranged that they are flexible and so that the vibration in the middle is confined to a controlled movement. This permits the grids to vibrate as the cotton passes over their surface and allows the leaf and motes to be again worked free of the grids once they start through.

At the bottom of the machine is an apron to carry the motes and dirt out of the machine at a constant rate. This apron is driven from the bottom cylinder shaft. The cylinders are set in ball bearings and the drive

Modernize Machinery Cleaning, Too

Jarrett's Trade Mark Reg.

META-CLEAN

With labor costs up and profit margins squeezed you cannot afford to use wasteful old fashioned cleaning methods . . . nor the extra down-time which they cause.

Jarrett's META-CLEAN removes oil, dirt, size deposits, etc., from all textile machinery and equipment in a small fraction of the time formerly required . . . one mill reports taking 1/7th of the time previously needed to clean a loom. You cut labor and down-time materially by using Jarrett's META-CLEAN.

Jarrett's META-CLEAN costs less to use because it is effective even when used as a 5% solution. Non-inflammable, non-irritating to skin, and pleasant in odor. For Spraying, Brushing, Wiping, or for Immersion of Smaller Parts.

PROOF

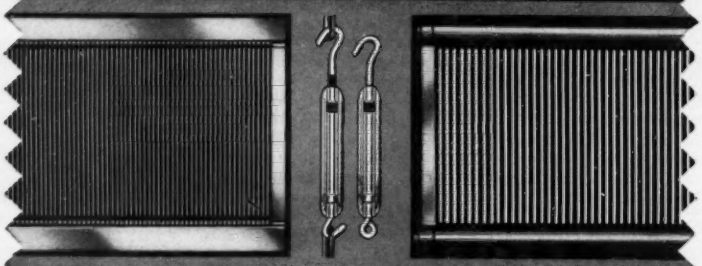
A steady stream of repeat orders . . . and unsolicited enthusiastic testimonials from hosiery, weaving, and spinning mills are the best proof of Jarrett's META-CLEAN effectiveness. Let us give you a demonstration on your equipment.

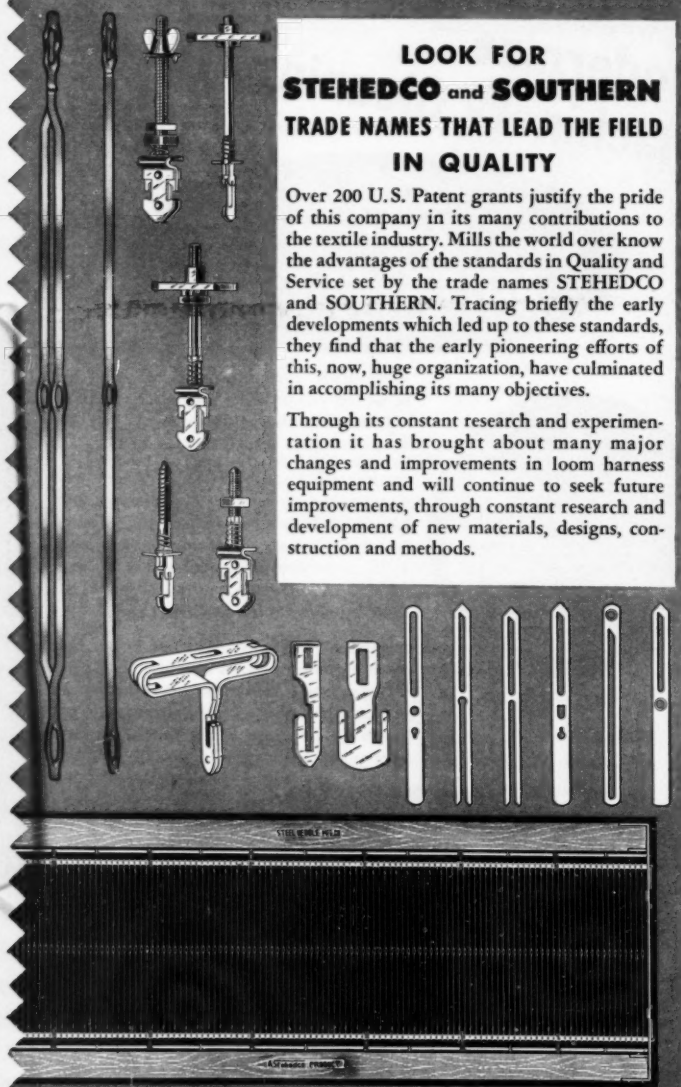
Satisfaction Given—Not Promised

CECIL H. JARRETT COMPANY, INC.

Manufacturer & Distributor of Chemicals & Supplies, Newton, N. C.

Stehedco and Southern





LOOK FOR
STEHEDCO and SOUTHERN
TRADE NAMES THAT LEAD THE FIELD IN QUALITY

Over 200 U.S. Patent grants justify the pride of this company in its many contributions to the textile industry. Mills the world over know the advantages of the standards in Quality and Service set by the trade names STEHEDCO and SOUTHERN. Tracing briefly the early developments which led up to these standards, they find that the early pioneering efforts of this, now, huge organization, have culminated in accomplishing its many objectives.

Through its constant research and experimentation it has brought about many major changes and improvements in loom harness equipment and will continue to seek future improvements, through constant research and development of new materials, designs, construction and methods.

Products that "Weave the World's Needs!"

NEW Equipment AND MATERIALS

is from the one cylinder to the next by pulleys and flat belts. All of these cylinders run at the same speed and in the same direction.

The construction of the cylinders is said to be radically different from previous beaters. The beaters consist of six flat radial blades. In the direction of rotation the face of the blade is 1½" deep. On the retreating side the blade is 3" deep. Between the blades are filling-in sheets of steel which make the cylinder completely enclosed. On the ends of the cylinder, discs are arranged to the same dimension as the over-all diameter of the blades.

Because of this construction, in the direction of rotation the beater strikes the fiber going through the machine with a sharp blow and throws it against the grids. As the blade passes over the grid, a negative air pressure is set up behind the blade. This is repeated on all six blades during the revolution. As the blade approaches the cut-off, the reverse section tends to prevent the cotton from passing by the cut-off and allows the beater to throw the cotton into the path of the following beater.

Because of the angle of throw, the cotton is struck in essentially the opposite direction to its flow, and consequently, with a sharp blow to throw the fiber again over the grids. In this way, the heavy impurities in the cotton are thrown out through the grids by the sharp blow of the beater. The particles of impurities which are lighter than the fiber come under the influence of the negative air pressure at this point and the tendency is to float these light particles out through the grids. This action results in a type of cleaning which, according to Mr. Curley, has not been possible in preceding types of machines.

The machine is essentially self-cleaning and needs to be checked only once or twice a shift, it is claimed.

Laps made from cotton passing through this machine are reported to show considerable improvement over laps made without the trash ejector. Even with strict middling cotton, the amount of dust removed by this machine shows a marked change in the color of the finished lap. The lap also shows less seed coatings and light particles as well

as less motes. Both the top and bottom of the lap as delivered from the calender shows less bunchy condition than is generally found in laps with the same type of cotton. With Low Middling or dirtier, there is a very marked improvement in the cotton which passes through this machine, according to Mr. Curley.

Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass.

For additional data, request item F-104, using business reply card on page 218.

Automatic Boarding, Drying, Stripping, Piling, and Counting Machine for Nylon Hosiery

Displayed at the Knitting Show

Recently developed for manufacturers or finishers of ladies' nylon hosiery, an automatic machine permits stockings to be finished at speeds from 12 to 25 dozen pairs per hour, depending upon the ability and speed of the individual operator. The equipment performs five operations automatically, and the boards pass continuously in front of the boarder in a position that makes boarding easy and convenient.

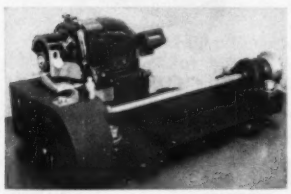
After passing through the machine, stockings are automatically stripped, piled, and counted on the stripping table. This part of the machine is located so that when it is necessary for the boarder to collect work from the table he simply turns to the left, removes each pile, folds it over, and places it on a stationary table without leaving his position in front of the machine.

Proctor & Schwartz, Inc., 7th Street and Tabor Road, Philadelphia, 20, Pa. (F-507).

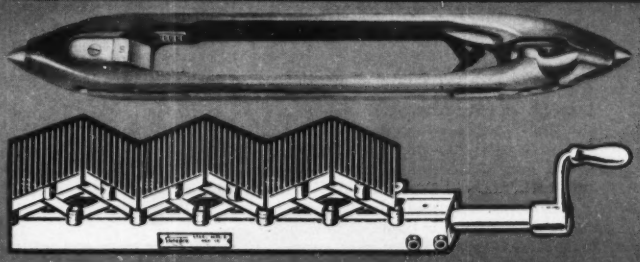
Belt Loop Cutter

Designed for application to any sewing machine, a new universal belt loop cutter operates from the same drive and at the same speed as the sewing machine. It is capable of cutting and meter counting all of the

Belt loop cutter (Fidelity).



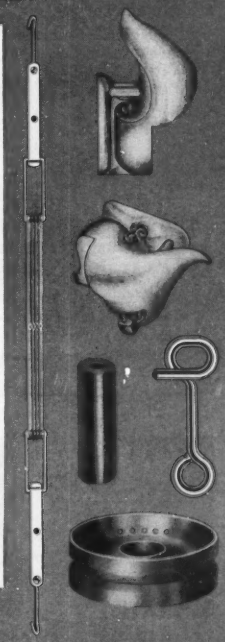
Stehedco and Southern

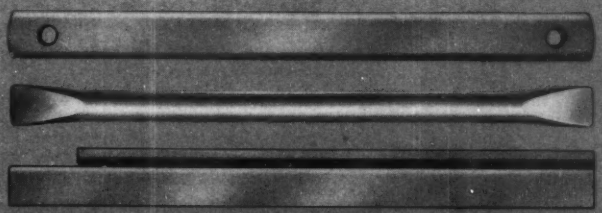


LOOK FOR
STEHEDCO and SOUTHERN
TRADE NAMES THAT LEAD THE FIELD IN SERVICE

The service obtainable from the loom harness manufacturer is as important to the mill as product quality. The Steel Heddle Manufacturing Company, not content with producing better loom harness equipment and accessories, has made every effort to provide the most efficient and economical distribution and service possible. The location of their many large plants and branch offices has been strategically planned for the benefit of the textile industry.

Competent staffs of Field Engineers are maintained for the express purpose of assisting with mill problems. These men appreciate new applications; they understand what successful product performance means.





STEEL HEDDLE MFG. CO.
3100 W. ALLEGHENY AVENUE PHILADELPHIA 32, PA.
Other Offices and Plants
Greenville, S.C. • Atlanta, Ga. • Greensboro, N.C. • Providence, R.I.

SOUTHERN SHUTTLES Paris Plant... Greenville, S. C.
A Division of STEEL HEDDLE MFG. CO.

STEEL HEDDLE COMPANY OF CANADA, LIMITED
310 St. Hubert Street Granby, Quebec, Canada

Products that "Weave the World's Needs!"

popular lengths from 1⅜" to 4½", and will handle sewn strips up to ⅝" in width with no time loss, no waste, and no additional power, according to the manufacturer.

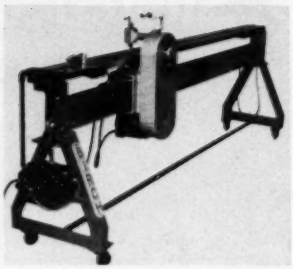
Mechanism required to adapt the cutter to the various types of sewing machines is supplied by the cutter manufacturer at no extra charge. Any competent mechanic can make the application and the necessary adjustments, it is claimed.

Fidelity Machine Co., Inc., 3908-18 Frankford Ave., Philadelphia 24, Pa.

For additional data, request item F-508, using business reply card on page 218.

Traveling Piece-End Sewing Machine on Portable Stand

A traveling piece-end sewing machine, manufactured by William Birch (Engineers) Ltd. of Manchester, England, and available through representatives in this country, is designed for piece joining wet or dry fabrics and has special features which make it especially suitable for difficult applications, the manufacturer claims.



Traveling piece-end sewing machine (Trumeter).

(1) It sews a perfectly straight seam to prevent creases traveling up the pieces when subject to tension in subsequent operations.

(2) It will successfully join materials difficult to process through a stationary machine, such as flimsy net or heavy duck.

(3) When processing crepes, etc., which shrink considerably when wet, fabric is stretched to normal width before sewing with a stretching device provided, and seam will not break down in later processes.

The machine is mounted on a portable stand equipped with rubber-tired casters; it also can be mounted permanently in front of the machine on which piece joining is required.

Cloth holders are adjustable for width of fabric, and each holder is provided with a limit switch to stop the machine when the piece is sewn. Parts that contact fabric are made of stainless steel.

Machine sews chain stitch about 3/16" long, 940 stitches per minute.

Trumeter Co., 1265 Broadway, New York 1, N. Y. (Sole representatives and agents for U. S. A., Canada, Mexico, Colombia, Cuba, Venezuela).

For additional data, request item F-106, using business reply card on page 218.

Electric Heat Blower Unit

For use on conveyor belts and other applications in the drying or preheating of textiles or other materials is an electric heat blower now

WICACO
ROLLER
BEARING SPINDLES
first in Quality since 1868
WICACO Roller Bearing Spindles, incorporating the SKF roller bearing type of bolster, are the finest spindles your money can buy, developed to perfection through the many years since Wicaco first introduced Roller Bearing Spindles to the Textile Industry.
Many textile mills have found that Wicaco Roller Bearing Spindles cost no more than ordinary ones, and reduce operating costs. We will design them to meet your particular requirements. Write today for quotations without obligation.
The WICACO SPINDLE OILING MACHINE guarantees proper lubrication for all twisting spindles, flushes out the old oil and replaces it with fresh clean oil in one simple operation. Saves time, labor, power. Order yours today, or send for descriptive folder NOW.
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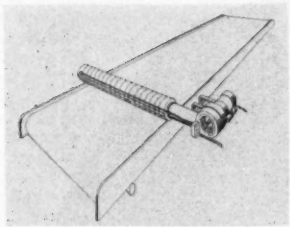
OTHER AGENTS in FOREIGN COUNTRIES

NEW Equipment AND MATERIALS



Heat blower (Master Appliance).

on the market. It blows 400 F air from an opening ¼" high and 36" long at a rate of 4800 feet air velocity per minute. Engineered so that even temperatures and pressure are achieved throughout the length of the blower. Unit presently available operates on 220 volts and draws 40 amperes. Air supply is developed by an electric motor driven blower. Heat is developed by electrical heating elements Other sizes are being developed.

Master Appliance Mfg. Co., Racine, Wis. (F-220).

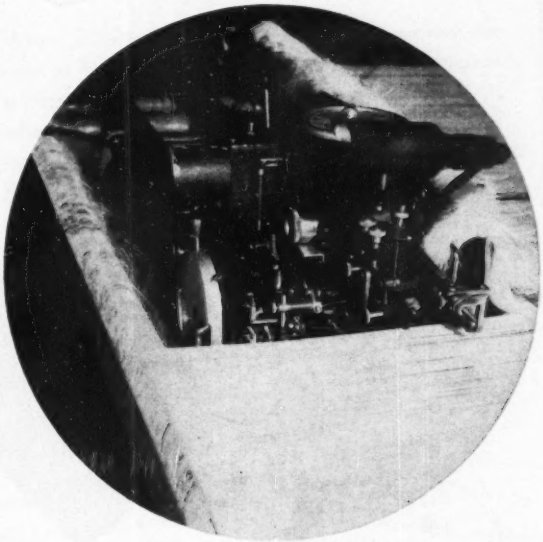
Circular Knitting Machines By Scott and Williams

Displayed at the Knitting Show

Known as the "MPI Machine," a multi-color pattern inlay machine has a wide scope of patterns. This machine knits the heel and toe with two feeds in action, thereby cutting knitting time in half. The unpatterned portion of the foot is knit with all four feeds in action. Upon completion, the finished stocking is pressed off and a new one started from the bare needles. In the top, with all four feeds in action, one can be used to interlace a rubber yarn, spaced every three courses. If desired, the heavier heel yarn may be used before and after the heel pocket to insure longer wear. The color inlay can also be extended into the foot fabric.

A 2½-inch Jacquard top Links and Links machine makes infants' and children's socks with fold-over tops with multi-color Jacquard designs in the cuff and links and links patterning in the leg. Equipped with a double selector drum, the machine uses the same selector mechanism for

Titan ties up to 108" of warp in **ONE** *operation*



***The TITAN warp tying machines today are tying-in warps up to 108" *automatically* in *one* operation.**

You don't have to stop this machine at the end of every section. It will tie every end from selvage to selvage in one uninterrupted operation. This is a real time and money-saving advantage.

This is why TITAN warp tying machines can make such verified production records as these:

Rayon, 75 denier	**18,000**	**knots per hour**
Cotton 20's	**16,000**	**" " "**
Woolen or Worsted	**16,000**	**" " "**
Nylon	**16,000**	**" " "**
Natural Silk	**10,000**	**" " "**
Silk Crepe, 100 denier	**10,000**	**" " "**

Warps of all these different yarns can be tied on the same machine with a simple change of needles.

For illustrated, descriptive literature regarding the TITAN warp tying machine write today to the

EDDA INTERNATIONAL CORP.
468 FOURTH AVE. NEW YORK 16, N. Y.
U. S. General Sales Agents
TITAN

Deeper, richer shades on *Fiber "V"

Amidye is Amalgamated's amazing new dyeing assistant for Fiber "V".

Amidye gives deeper, richer shades with better dye absorption. No difficulty in obtaining excellent wet and dry crock-fastness. Excellent results with maroon, cordovan and navy sweaters and socks where deep, lustrous shades are so important.

Amidye is a solution of a sodium salt of a complex phenol combined with suitable surface active agents. It can be used with *your* method of dyeing—on men's hose in rotary machines, on sweaters in paddle machines. In package, skein and piece goods dyeing.

We want you to see how Fiber "V"—now Dacron—*comes alive* with Amidye in the dyebath. Write or call your Amalgamated representative for production sample today.

AMALGAMATED CHEMICAL CORP., Phila. 34, Pa.
Southern Division: 1819 Spring Garden Street, Greensboro, N. C.

*DuPont T.M.

Amalgamated

the top as in making the links and links, but distinct patterns are obtained by the use of a new double selector.

The Economy True Rib Machine, known as the ETR, knits a true rib and a plain knit leg in one operation. The ribbing is comparable in quality with that made by separate ribbers but production is greatly increased, according to the manufacturer.

Scott and Williams, Inc., Laconia, N. H. (F-509).

Packless Expansion Joints

A line of leakproof expansion joints recently introduced features packless construction and is comprised of two types: One is a flexible expansion joint for applications where flexibility is needed in addition to expansion; its flexibility prevents any strain on piping. The other is designed for applications where expansion only is required. Joints can be used for steam, water, oil, chemicals, and gas. 125 lb to 250 lb semi-steel, 425 F; 150 lb to 300 lb welded construction, 700 F. Both screw and flanged types, with or without base. Traverse 3", 6", 9". Sizes 1¼" to 24".

The Phillips Rotary Joint and Valve Co., Inc., 5711-13 Boulevard East, West New York, N. J. (F-202).

Ultra-Violet Lamp for Inspection of Textiles

A line of "Blak-Ray" high-intensity, long-wave, ultra-violet lamps is said to have important applications particularly adaptable to the textile industry.

When directed at certain substances the invisible "black-light" rays cause a phenomenon known as fluorescence, whereby these substances radiate a color different from their own. Thus variations that are invisible, or nearly so, in ordinary white light, stand out with startling clarity when exposed to the ultra-violet rays.

This makes the lamps extremely useful for (1) observing, analyzing and comparing materials, weaves, dye lots, (2) inspecting for flaws and variations, (3) "invisible" marking during manufacture, (4) locating

To the man who buys CASTERS

When a caster which has been on the market for only a little over a year is adopted as original equipment on many of the finest textile trucks . . . when it is bought—exclusively—by many of the most progressive mills . . . there must be a reason. Below are a few of WIL-MAT Casters advantages:

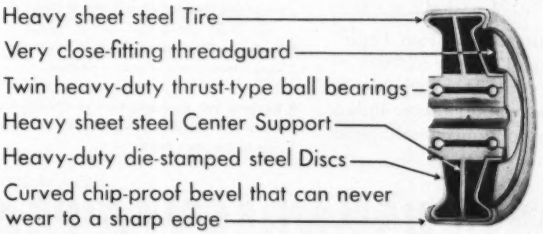
1. Super-Smooth Action
Twin heavy steel ball bearings, in thrust type hardened natural raceways make this the freest spinning caster on the market.

2. 30% to 40% More Tread
This heavy drawn sheet steel means far longer service and reduced costs.

3. Floor-Protecting Tread
WIL-MAT's curved chip-proof bevel cannot wear to sharp edges . . . will not cut or gouge floors. Its sheet steel tire will not pick up grease, oil, or grime to track-up floors.

4. Great Strength
Heavy and accurately machined parts give WIL-MAT Casters exceptional carrying capacity and long life.

. . . And They Won't Clog Up

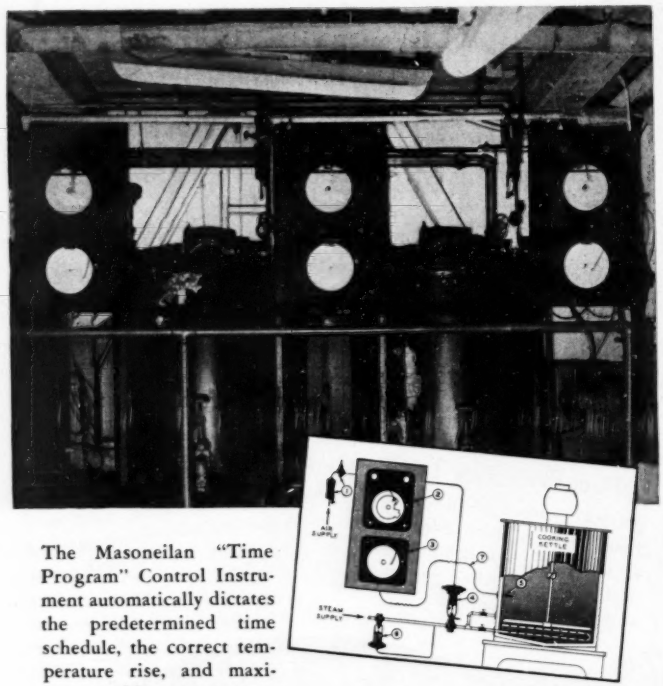

Heavy sheet steel Tire
Very close-fitting threadguard
Twin heavy-duty thrust-type ball bearings
Heavy sheet steel Center Support
Heavy-duty die-stamped steel Discs
Curved chip-proof bevel that can never wear to a sharp edge

WIL-MAT CASTERS
RIGID OR SWIVEL
WILKIN & MATTHEWS—Charlotte, N. C.

MASONEILAN CONTROLS

"Eliminate the Guess"

From Size Cooking



The Masoneilan "Time Program" Control Instrument automatically dictates the predetermined time schedule, the correct temperature rise, and maximum cooking temperature. It assures uniformity of size in cook after cook . . . eliminates guesswork because the process is controlled automatically from beginning of the rise to finish of the cook. It will pay you to investigate Masoneilan Controls for your mill. Send for new catalog.

Check These Advantages!

- **Automatic Control Program** — Accurate schedule of rise, temperature and time of cook.
- **Reduces Production Costs** — Saves time and keeps steam consumption at a minimum.
- **Records for Reproduction** — Provides the operator with recording on eight, twelve or twenty-four hour temperature charts.

MASON-NEILAN REGULATOR CO.

1194 Adams Street, Boston 24, Mass.

Sales Offices or Distributors New York • Syracuse Tulsa • Philadelphia • Houston Denver • Cincinnati • Detroit • San Francisco • Salt Lake City • El Paso • Boise • Albuquerque Charlotte, N. C. • Los Angeles

MASONEILAN

in the Following Cities Chicago • St. Louis Pittsburgh • Atlanta • Cleveland Mason-Neilan Regulator Co., Ltd., Montreal and Toronto

NEW Equipment AND MATERIALS

oil spots on fabrics and tracing to their origin, (5) displaying and merchandising manufactured items.

The lamps are Underwriters' Laboratories approved.

Available in 4, 8, 15, 30, 40 and 80-watt sizes, the fixture may be rested on a flat surface, mounted flush to wall or ceiling, or hung from brackets.

Ultra-Violet Products, Inc., South Pasadena, Calif.

For additional data, request item F-114, using business reply card on page 218.

Full-Fashion Hosiery Length Tester

Displayed at the Knitting Show

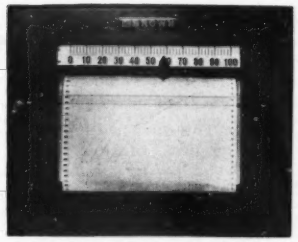
A hosiery length tester now on the market includes a table which is graduated in inches to measure length on each side of the stocking. The machine shows tight and loose knitting on each side of the stocking being tested. Called the Bridgeport length tester, the equipment is used to measure the difference in length of each side of the stocking from after welt to high splice heel in one operation.

Southern Mill Equipment Corporation, 508 West Fifth Street, Charlotte, N. C. (F-510).

Tap for Electric Service

An addition to a line of electrical connectors is a service tap that is reported to have many advantages: husky, compact tap is cast of high strength copper alloy for heavy duty service connections for both inside and outside use; to permit easy insertion of conductors, casting is designed to swivel; construction is such that it keeps tap assembled when clamp is open; serrations on both body and cap prevent cables from working loose after tap is installed. Conductors are forced into high pressure contact by two standard hex-head cap screws. Spacer available for separating individual conductors. Can be used for dead-ending wires also. Sizes from No. 2 to 1000 Mcm (Main); No. 10 to 1000 Mcm (Tap).

O. Z. Electrical Mfg. Co., Inc., 262 Bond St., Brooklyn, N. Y. (F-211).



Brown ElectroniK function plotter.

New Device Compiles, Plots Automatically

The automatic compiling of two measurements and plotting of a curve to show their interrelationship, namely: Y equals f (X), is made possible by an electronic instrument now available. Designated the Brown ElectroniK function plotter, the instrument is said to incorporate two measuring systems, one of which actuates the recorder pen while the other motivates the instrument chart. With this arrangement the chart is driven up and down in response to the changes in one variable simultaneously with the movement of the pen in response to changes in a second variable. The result is a curve which continuously evaluates one variable in terms of the other. No interpolation is needed to complete data between points of measurement.

Brown Instruments Division, Minneapolis - Honeywell Regulator Co., Wayne & Windrim Aves., Philadelphia 44, Pa. (F-208).

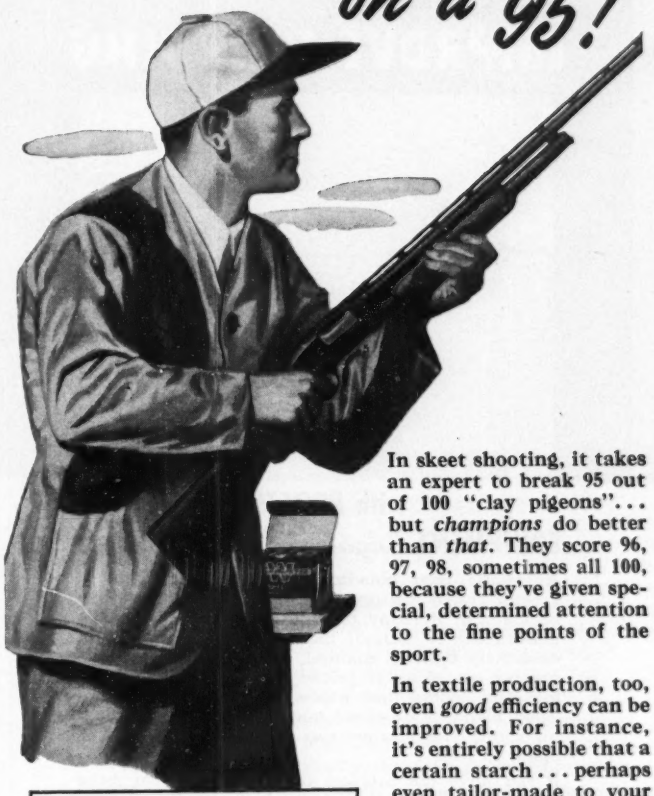
Triple Deck Twister

Displayed at the Knitting Show

A triple deck twister has been made with fully enclosed drive and twist end. The machine has been operated on 30-denier nylon, inserting 30 turns of twist at a spindle speed of 15,500 rpm. Three different types of packages have been run simultaneously; these included: tapered end package, straight end package (headless bobbins), and regular takeup spools. The twister was designed to twist any range from 5 to 55 tpi and up, according to the manufacturers.

No flyers were used on the machine running nylon, but flyers may be used on other yarns. A mobile platform is attached to the frame so operators may easily reach and service the top deck. A thirteen-oz package was used on a trial run; however a one pound package is maximum

You CAN improve on a 95!



In skeet shooting, it takes an expert to break 95 out of 100 "clay pigeons"... but *champions* do better than *that*. They score 96, 97, 98, sometimes all 100, because they've given special, determined attention to the fine points of the sport.

In textile production, too, even *good* efficiency can be improved. For instance, it's entirely possible that a certain starch . . . perhaps even tailor-made to your own specifications...could contribute to an efficiency gain.

Why not call your Anheuser-Busch representative? He'll be glad to come and talk it over.

CORN STARCHES
DEXTRINES
GUMS
CORN SYRUPS

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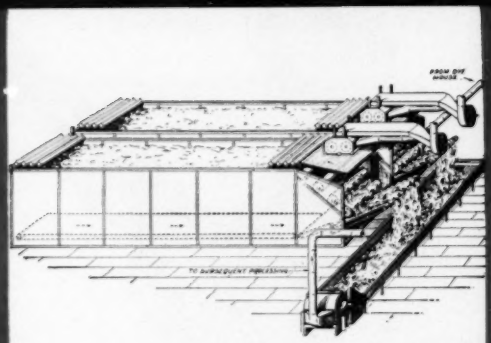
CHARLOTTE, N. C. 607 JOHNSTON BLDG.
NEW YORK, N. Y. 33rd & 12th AVE.

SLASH COSTS
IMPROVE BLENDING



with PROCTOR AUTOMATIC

EQUIPMENT *Engineered to your needs*

Automatic fiber blending, as accomplished by a Proctor system designed for your individual needs, brings with it many advantages. It eliminates the unevenness of manual blending, thus assuring an absolutely uniform mixture. It often makes possible greater use of lower priced stocks and because of the rigid control that is possible, still assures a finished blend of excellent quality. In some instances automatic blending reduces direct labor costs by as much as 75%.

If you have the problem of blending two or more stocks—let Proctor engineers show you how to accomplish it automatically. Concrete figures will show how automatic blending pays for the equipment in a matter of months and then begins to show up in increased profits. Much Proctor drying equipment and textile machinery is covered in full or in part by patents or patents pending.

PROCTOR & SCHWARTZ INC.

6110 TABOR ROAD • PHILADELPHIA 20 • PA.

NEW Equipment AND MATERIALS

capacity. The equipment operates on spools; no pirns are used.

A doubler twister has been redesigned, basically to make the operation simpler than it was on older models.

U. S. Textile Machine Co., 700 Gilligan St., Scranton 8, Pa. (F-511).

Air Hose Construction Changed from Cotton to Rayon

Construction of the Goodrich Type 88 air hose has been changed from cotton to rayon fabric reinforcement, according to information recently received. It is claimed that the change effects a desirable decrease in weight and an increase in flexibility of the hose. Working pressures remain the same.

The B. F. Goodrich Company, Akron, Ohio (F-205).

Diesel-Powered Lift Truck with Fluid Transmission

An industrial fork lift truck powered by a diesel engine and equipped with a hydraulic transmission is now available commercially. Called the "Diesel-Lift," it is specifically designed for applications where fire hazards exist, where there is a limited amount of fresh air, and in outdoor areas where continuous heavy-duty operation is a necessity. Although diesel fuel is less volatile and flammable, a condenser type water muffler which screens out sparks in the exhaust gases is provided for further safety. Muffler has Underwriters' Laboratories approval, according to the manufacturer. Overall height, 88½"; wheelbase, 72"; primary lift, 66"; overall height channel, 85"; overall width, 62"; weight of truck, 9600 lb; speed, 13 mph.

The Yale & Towne Mfg. Co., Philadelphia Div., 11000 Roosevelt Boulevard, Philadelphia 15, Pa. (F-212).

Delayed Action Light Switch

The Edco Delayed Action Light Switch, looking very much like an ordinary light switch, snaps light on in the same manner as a regular switch, but when the toggle is snapped to the off position, labeled "De-

lay," the light stays on for almost a full minute before it goes out. According to the manufacturer, it provides enough time for a person to walk approximately 75 feet before the light goes out. Action is entirely automatic. Switch may be quickly and easily installed in any existing wall outlet or in new construction. Approved by Underwriters' Laboratories, Inc., and fully guaranteed.

Electric Deodorizer Corp., 9993 Broad St., Detroit 4, Mich. (F-213).

Optional Heating Media for Hosiery Conditioner

Displayed at the Knitting Show

An automatic hosiery conditioner for 15 denier hosiery has been made available with either electric or steam heating equipment. The models now offered are essentially the same as those previously marketed by this firm except that the conditioner may be equipped with either electric or steam heating units to suit the processor's requirements.

Backus Machine Works, Carlstadt, N. J. (F-511).

Mechanical Seal Incorporates Teflon Sealing Member

An improved mechanical seal, designated as the Type 9 Mechanical Shaft Seal, is said to perform effectively under severe temperature and corrosive conditions. It incorporates a flexible ring molded from Teflon. The Teflon "wedge-ring" enables this seal to combine the chemically-inert properties of Teflon with the flexibility and positive sealing components essential to effective mechanical sealing. Unit can be employed at temperatures up to 500 F. It is designed for service on various rotating shaft applications such as centrifugal pumps, turbines, positive displacement pumps, and agitators.

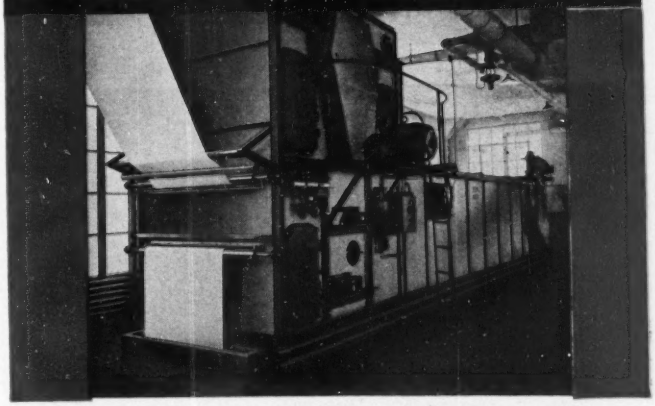
Crane Packing Company, 1800 Cuyler Ave., Chicago 13, Ill. (F-214).

2000-lb Electric Lift Truck Completely Redesigned

Featuring simplified automotive-type controls, hydraulic lift, and compact size, a completely redesigned line of light capacity electric fork lift trucks is available in capacities up to 2000 lb. Units are designed for those concerns desiring the advantages of sit-down operation, short wheelbase, and maneuverability. Over-all height, 83"; wheelbase,

CONTINUOUS VAT DYEING IMPROVED BY

OPEN WIDTH BLEACHING



Open width bleaching, as accomplished in the Proctor-Mathieson system, is proving ideal preparation for fabrics that are to be vat dyed in dark shades . . . fabrics of the type called for in many government specifications. With this system fabrics *in the open width* are gently conveyed through the caustic and peroxide steaming cycles. This combines the advantage of *continuous bleaching* with a *minimum of cloth pressure.* Packing and roping of the fabric is eliminated. Handling the fabric this way—in the open width, chafe marks, rope marks and other distortions which cause defects in continuous dyeing are eliminated. The result—bleaching time is reduced, costs are kept down, fabrics are dyed with greater ease—and you are in much better position to handle important government contracts.

Write for bulletin 346 which explains this system in greater detail.

Much Proctor drying equipment and textile machinery is covered in full or in part by patents or patents pending.

OTHER EQUIPMENT FOR DEFENSE CONTRACTS

PRIORITY INFORMATION

PROCTOR & SCHWARTZ INC •

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Anemostat Air Diffusers Here!

Better Quality Roving Here!

Anemostat Air Diffusers provide properly diffused air in the cotton carding room and throughout the new Hightower Textile Building at the Georgia School of Technology.

Scientifically designed Anemostat Air Diffusers accomplish this by distributing any volume of cooled or heated air in predetermined patterns . . . *without drafts.* Anemostats equalize temperature within the occupancy zone to plus or minus one degree and equalize relative humidity as well.

You can also use Anemostat Air Diffusers for spot cooling to neutralize machine heat loads. They are adaptable, too, to zone control of special areas. Anemostat's wide range of designs—including adjustable diffusers—assure flexible and perfectly balanced installations.

SPECIAL BULLETIN 32 tells the full story on the application of **ANEMOSTAT AIR DIFFUSERS** to textile manufacturing and processing. Write for your copy.

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DRAFTLESS *Aspirating* **AIR DIFFUSERS**

ANEMOSTAT CORPORATION OF AMERICA

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REPRESENTATIVES IN PRINCIPAL CITIES

"NO AIR CONDITIONING SYSTEM IS BETTER THAN ITS AIR DISTRIBUTION" AC-1257

41¼"; primary lift, 19¼" or 69"; forward tilt, 3 degrees; rear tilt, 10 degrees; weight, 4280 lb; speed, 6½ mph.

The Yale & Towne Mfg. Co., Philadelphia Div., 11000 Roosevelt Boulevard, Philadelphia 15, Pa. (F-215).

30-inch Automatic Circular Knitting Machines

Displayed at the Knitting Show

The fully automatic OTS plain circular transfer rib machine produces fine gauge Jersey bodies with knitted-on 2x2, 2x1, or 1x1 bottom with cotton separation in 30-inch size. Improved OT circular transfer and interlock machines transfer from rib to Jersey and from French welt to Jersey. The OT also produces interlock bodies with 2x1 rib in waistline and shoulder in 30-inch size.

Ordnance Gauge Company, Amber and Hagert Streets, Philadelphia 25, Pa. (F-512).

Automatic Dial-Type Gummed Tape Dispenser

The "Dial-Taper" is a gummed tape dispenser with telephone type of dial that displaces manual with automatic operation. The operator simply selects the length of tape needed and a twirl of the dial starts and stops the machine automatically as it dispenses any desired length of tape.

Marsh Stencil Machine Co., Belleville, Ill. (F-216).

Moisture Meter Features Wide Range

An all-purpose meter for measuring moisture content of any material that will accommodate electrode probes features an overall range of from 2000 ohms to 20,000 meg-ohms and also a larger scale for greater ease in reading. Known as the TAG Moisturonic Moisture Meter Model 8008 the portable instrument operates on the resistance principle. Available in two forms: one with a scale calibrated for use with lumber, wood, plaster, etc., and the other with linear graduations for use with materials for which no calibrations have been determined. Furnished in bat-

Moisturonic moisture meter, Model 8008 (Weston).

tery operated model or for operation on 115 volts, 60 cycles, a-c.

Tagliabue Instruments Div., Weston Electrical Instrument Corp., 614 Frelinghuysen Ave., Newark 5, N. J. (F-222).

Sunotex Machine Oil Light

Displayed at the Knitting Show

A lubricant for needles, sinkers, and supplementary parts of all kinds and makes of knitting machines is called Sunotex Machine Oil Light. It is essentially the same as Sunotex Machine Oil except that it is lighter in viscosity.

Sun Oil Company, Philadelphia 3, Pa. (F-513).

New Unit Stresses Sensitive Control

A compact and lightweight transmitter, designed for more sensitive measurement and control of fluid flows, is called a Differential Converter. It has a continuously adjustable range from 0-20 to 0-200 inches of water (differential pressure) and provides this 10 to 1 change of range with no change of parts. Field calibration of any range is said to be possible by the use of scale type weights which eliminate the need for a water column. Operating on the pneumatic-balance principle without mercury, the device employs an accurate weight-beam system in which the differential pressure, due to fluid flow at the metering orifice, is continuously balanced by a pneumatic recording or controlling instrument. Extremely fast speed of response to rapid changes in flow is prime feature claimed for system.

Brown Instruments Division, Minneapolis - Honeywell Regulator Co., Wayne and Windrim Aves., Philadelphia 44, Pa. (F-217).

High-Speed Warp Knitter

Displayed at the Knitting Show

The Mayer high-speed loom is a warp knitting machine designed for speed, versatility, and production economy in the manufacture of tricot fabrics. The machine is compact and operates smoothly at high speeds.

Alfred Hofmann and Co., 635 59th Street, West New York, N. J.

Selvage Trimming Machine

Recently placed on the market was the Gara selvage trimming machine which is designed for use in conjunction with a special unrolling machine that insures a constant rate

NON-FLUID OIL

TRADE MARK REGISTERED

55 Years of Lubrication Progress

April 21, 1896-1951. As we celebrate our 55th anniversary of lubrication service to industry, it brings to mind the saying, "It must be good to be where it is today." During this terrifically competitive period of industrial expansion, the unique drip-less, waste-less properties of NON-FLUID OIL, and its ability to provide cleanly, dependable and economical lubrication, have enabled this product to keep pace with the lubrication needs in all phases of U. S. industry.

Huge petroleum mergers have been the order of the day during the first half of the twentieth century. NON-FLUID OIL has been able to survive and flourish in the shadow of this "sheer bigness" because of its higher efficiency and greater economy than ordinary oils and greases—aside from its cleanly features.

NON-FLUID OIL is made in grades exactly suited to the lubrication of all types of textile machinery.

Send for instructive bulletin and free testing sample of NON-FLUID OIL.

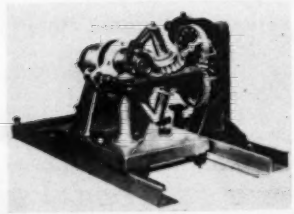
NEW YORK & NEW JERSEY LUBRICANT CO.

292 MADISON AVE., NEW YORK 17, N. Y.
Works: Newark, N. J.

WAREHOUSES: Atlanta, Ga. — Birmingham, Ala. — Charlotte, N. C. — Chicago, Ill. — Columbus, Ga. — Detroit, Mich. — Greensboro, N. C. — Greenville, S. C. — Providence, R. I. — St. Louis, Mo.

NON-FLUID OIL is not the name of a general class of lubricants, but is a specific product of our manufacture.

NEW Equipment AND MATERIALS



Gara selvage trimming machine (Muschamp Taylor).

of feed to the trimming head, regardless of the width or weight of the fabric in process.

In operation, the cloth passes between guide plates on the trimmer head. Two rapidly rotating brushes, placed above and below the cloth, insure that every trailing end is taken beyond the edge of the cloth and laid in position, at an angle of 90 degrees to the cloth, to be cut by the rotating circular knives. Loose ends are then removed by suction to a conveniently placed receptacle under the unrolling machine.

Cutting knives may be easily removed for sharpening or replacement. It is impossible for the machine to cut into the fabric, the manufacturer claims; also, machine will follow an uneven selvage so that a clean edge is produced, regardless of how irregular the cloth might be.

Available for use in conjunction with the Gara machine is a weft-splitting attachment for use in clearing the selvages of check and other fabrics woven on box looms.

Trimmer may be purchased as separate unit for application on existing plaiting, etc., machines.

Muschamp Taylor Limited, Pollard St., Manchester 4, England.

For additional data, request item F-108, using business reply card on page 218.

Synchronous Motor Timer

For accurate control of a wide variety of timed operations, the Type SY "Promatic" timer is recommended. It can be used for all time periods between ½ second and 24 hours. It actuates five s.p.d.t. load contacts independent of the timer-control circuits. There are two separate solenoids—one operates the clutch and timing mechanism; the other actuates the load contacts.

General Control Co., Boston 34, Mass. (F-219).

Tray Dryer for Nylon Hosiery

Displayed at the Knitting Show

Semi-continuous operation is provided in processing 30 to 50 dozen pairs of nylon hosiery per hour on a tray dryer. The equipment eliminates the boarding operation and applies through circulation air principle to drying nylon hosiery in bulk piles.

Proctor & Schwartz, Inc., Philadelphia 20, Pa. (F-515).

New Clutch Coupling

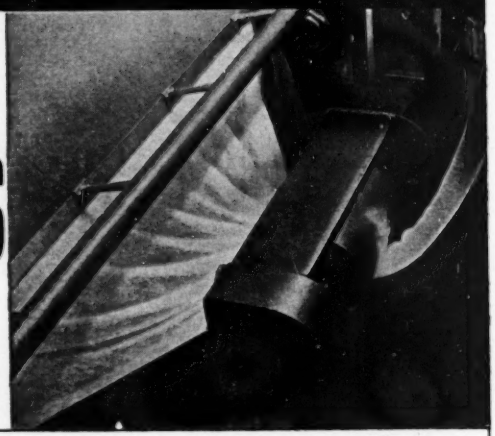
Designed especially for installation on the shafts of integral horsepower electric motors up to 15 hp, is the Series "E" Mercury clutch coupling. This is a complete unit consisting of

10.000.000 CARDING POINTS NEED PERFECT GRINDING ROLLS

CONSULT THE CARD-GRINDING SPECIALISTS

DRONSFIELD'S

TRAVERSE WHEEL GRINDER Nº 120



SOLE AGENTS FOR DRONSFIELD'S MACHINERY :-

JOHN HETHERINGTON & SONS INC.

BOSTON · MASS.

SOLID GRINDING ROLLER Nº 112

DRONSFIELD BROTHERS LTD · OLDHAM · ENGLAND

a Series "E" Mercury clutch with provision for mounting a standard flexible coupling between it and the driven load. Used in conjunction with a flexible coupling it provides a satisfactory connection between the motor shaft and the driven shaft without the necessity of maintaining exact alignment.

Mercury Clutch Division, Automatic Steel Products, Inc., Canton, Ohio (F-516).

Electric Fork Truck Announced by Clark

Features of the new Clipper, electric battery-powered fork-lift truck, include increased speed, 2000-lb capacity at 24-inch load center, "fingertip" directional lever, automatic acceleration, "deadman" safety control, pivot mounted steering axle, and cushion-style tires as standard equipment. Dimensions: overall length, less forks, 63⅝"; minimum intersecting aisles, 57"; overall height of standard uprights with forks down, 83"; overall height at 124" maximum lift, 142½" with other uprights and tiering heights available.

Clark Equipment Co., Industrial Truck Div., Battle Creek, Mich. (F-218).

Multiple Head Automatic Knitter

Displayed at the Knitting Show

Built with multiple sections producing three or four bands of fabric at a time, a new narrow fabric knitter has a light aluminum carriage running on ball bearings. An electric stop motion cuts off the motor current when the yarn breaks, runs out or catches on a knot. An individual back geared ¼-hp motor is connected by a V-belt to the driving pulley of the machine. A special combination switch and relay is controlled at the front of the machine, making it convenient for the operator to start and stop.

Ainslie Knitting Machine Co., Inc., Brooklyn 11, N. Y. (F-517).

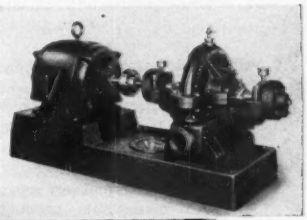
Speed-Trim Thread Trimming Machine

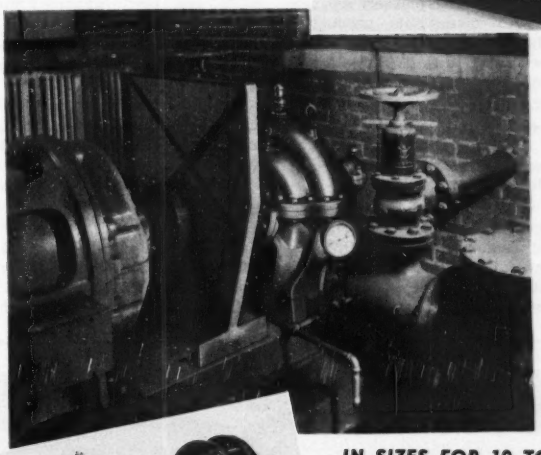
For use in thread trimming operations, the Speed-Trim machine is easily adaptable to any type operation, may be quickly adjusted, and may be installed on existing tables anywhere, according to the makers.

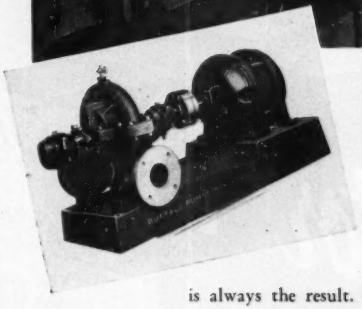
David Maimin & Co., 633 Arch St., Philadelphia 6, Pa. (F-518).

For the Economy of Trouble-Free CLEAR WATER PUMPING

"Buffalo" "SL" PUMPS







IN SIZES FOR 10 TO 10,000 GPM AND FOR HEADS UP TO 300 FEET

"Buffalo" Single Stage Double Suction Pumps are performing every type of clear water service in industry—and doing it so efficiently and with so little maintenance care that economy is always the result. Upper half of the pump casing is easily removed for impeller inspection without disturbing pipe connections, making for inexpensive servicing. The efficient "Buffalo" impeller is in perfect hydraulic balance—while casing water passages are simply formed to avoid friction losses. Shafts, casings, impellers, bearings and pump stands are all oversize for long-life insurance. Specify "Buffalo" Pumps and you'll get the economy of trouble-free pumping.

Write for Bulletin 955-N!

"Buffalo" PUMPS

BUFFALO PUMPS INC.

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Canada Pumps Ltd., Kitchener, Ont.

Branch Offices in All Principal Cities

A BETTER CENTRIFUGAL PUMP FOR EVERY LIQUID

What the TEXTILE MILLS are doing

Wennonah Cotton Mills, Lexington, N. C., celebrated their 65th anniversary with an open house on May 1-3.

Berkeley Mills, Inc., Balfour, N. C., is undergoing an expansion program which will double its production capacity and increase employment 50%, according to H. T. Rindall, mill manager.

An addition, to provide approximately 54,000 sq ft of floor space, is being constructed at **Harmony Grove Mills, Inc.,** Commerce, Ga.

A 14,000-spindle carded yarn mill is being opened at Camp Croft, S. C., by **Arkwright Mills Corp.** The plant is expected to produce 45,000 pounds of yarn a week.

Plans are underway for the reactivation of **Harrisburg (Ore.) Woolen Mills** to take care of government orders for army and navy blankets.

The **Dixie Duck Mill,** Spartanburg, S. C., has been organized for the weaving of duck for the armed services. Superintendent of the new mill is Roy Turner, former third shift supervisor at Beaumont Mills.

A two-story and basement structure is being built at **P. H. Hanes Knitting Co.'s** Mill No. 4, Hanes, N. C., to provide expansion of carding and spinning departments.

All outstanding stock of **Greenville (N. C.) Mills, Inc.,** has been purchased by **Artloom Carpet Co., Inc.** and the plant will be operated as a wholly-owned subsidiary, according to Alfred Therkeldsen, local manager. The plant will be used to manufacture woolen yarns for blankets and carpets, according to reports.

American Thread Co. has announced plans for construction of a large finishing plant near Marion, N. C. The new plant will house the company's yarn mercerizing and finishing operations now located at the Kerr Mill plant in Fall River, Mass.

Plans have been completed by **Textron, Inc.,** for two new weaving mills and one new tricot knitting unit, according to Royal Little, president. The additions are expected to raise the company's capacity on synthetics to 8000 looms and 240 tricot knitting machines. The firm has also announced that all Textron plants in Anderson County, S. C., have had modern air conditioning units placed in operation.

The Saxony mill property of **Hockanum Mills,** Rockville, Conn., division of M. T. Stevens & Sons Co., has been sold, and the equipment

currently housed therein is being moved to another Stevens mill.

John E. Edgehill, 81 Audubon Road, Wellesley, Mass., is president of the newly organized **Edgehill & Co., Inc.,** Boston, Mass. Fibrous materials and textile fabrics of various kinds will be manufactured.

The mill and equipment of **Best Silk Manufacturing Co.,** Pleasantville, N. J., has been purchased by and will be operated as a branch mill of Horace Linton & Brother, Inc., Philadelphia, Pa.

An expansion program is underway at the mill of **Sayles Biltmore Bleacheries, Inc.,** Biltmore, N. C., which will include installing bleaching and other machinery for increased capacity.

A mill near Burlington, N. C., will be operated by the recently chartered **Belonda Hosiery Mills, Inc.** Albert and Louis Lindy are principal incorporators.

W. Clary Holt and Emerson Sanders are principal incorporators of the new **Burtex Mills, Inc.,** Burlington, N. C., which will manufacture hosiery.

The newly chartered **Guild Mills Corp.,** Mount Holly, N. C., will manufacture textile fabrics, according to Alexander Bell and Lewis Chattum, principal incorporators.

A weaving plant at Sanford, N. C., to employ approximately 1400 persons, is under construction by **Burlington Mills Corp.** It will be equipped for weaving rayon and other synthetics.

The newly incorporated **West Unity (O.) Woolen Mills, Inc.,** has taken over and succeeded the company of the same name. Walter C. and Maurine C. Webster are principal incorporators.

Walter L. Snizek, 331 Lake St., South Bellingham, Mass., is representative for the recently organized **Consolidated Print Works, Inc.,** and **Northeastern Dye Works, Inc.,** Cumberland, R. I.

Berkshire Textile Mills, Inc., Andrews, S. C., has been organized by officials of Berkshire Knitting Mills, Inc., for the operation of a full-fashioned hosiery mill.

Johnson & Johnson, Inc., New Brunswick, N. J., has made arrangements for the manufacture of its products at the **Texas Textile Mills** plant in Dallas, Texas. An expansion and improvement program will be carried out for production requirements.

The **Anniston (Ala.) Yarn Mill,** division of the Southern Mills Corp., has been sold to F. F. Phillips and associates of Siluria, Ala. Mr. Phillips is president of the Buck Creek Cotton Mills of Siluria, and Valley Mills, Columbiana, Ala. The company will henceforth be called Anniston Yarn Mills, Inc.

Reeves Brothers, Inc.'s new rayon finishing plant at Bishopville, S. C., will be known as the Bishopville Finishing Co., according to John M. Reeves, president. It will specialize in the finishing of year-round and summer weight rayon suitings, and will be engaged in finishing the rayon grey goods produced in the firm's Osage Mill at Bessemer City, N. C.

Dundee Mills, Lowell Bleachery, and Rushton Mills, Griffin, Ga., have inaugurated a new hospitalization

What the TEXTILE MILLS are doing

and surgical insurance plan for their employees. Premiums will be paid jointly by the employees and participating mills.

Contract has been awarded by **Southern Pile Fabric Co.,** Greenville, S. C., for construction of a one-story addition to the dye house.

Full-fashioned hosiery will be manufactured at **Oakmont, Inc.,** Rock Hill, S. C., according to David W. Baer, president of the recently organized firm.

Bigelow-Sanford Carpet Co. has become the major holder of securities in the Hartford Rayon Corp., and a program of conversion and expansion is under way to produce a larger quantity of carpet rayon. James D. Wise, president of Bigelow-Sanford, and W. H. Freyer, John A. Donaldson, and R. B. Freeman, all officers of the firm, were elected directors of Hartford. Although emphasis will

Series 20 of typical "H-W" CONDITIONER applications:

Sapphire hosiery corporation

installs a NEW "H-W" CONDITIONER

in their Telford, Pa. Mill

Here's another enthusiastic report of the operating advantages of the "H-W" Conditioner . . . from Sapphire Hosiery Corporation:

"The 'H-W' Conditioner, recently installed in our Telford, Pa. mill, has considerably improved our conditioning operation. The yield of perfects have increased 15 percent and better.

"Our operators and examiners report seaming and looping are done more easily, with greater production attained; no picks and pulls, and all with very little mending.

"We feel that the Conditioner has already paid for itself by operational savings and by proper conditioning of our stockings."

"H-W" CONDITIONER for Nylon Hosiery in Sapphire Hosiery Corporation Mill.

THE INDUSTRIAL DRYER CORPORATION

STAMFORD, CONNECTICUT

What the TEXTILE MILLS are doing

be placed upon output of carpet rayon, the company will continue to make viscose type continuous filament textile rayon, according to James D. Wise, president.

By October, 1951, **Pioneer Worsted Co.**, New Braunfels, Texas, expects to start delivery of worsted suitings woven in Texas from Texas wool. The weaving mill, now under construction, in connection with Pioneer's scouring and spinning plant, will have a potential capacity of a million yards of worsted annually, according to Robert E. Pent, president.

Aberfoyle Manufacturing Co., in selling its controlling interest in Aberfoyle, Inc., Norfolk, Va., has withdrawn from the weaving field after more than 100 years. The new owners, David Seidman and Myron Alexander of New York, N. Y., are reported planning to continue the weaving firm as an integral part of their own operation.

Macon (Ga.) Hosiery Mills have in progress an expansion program for increased capacity.

Samuel J. Kologney, 32 Felix St., Providence, R. I., is attorney and representative for the newly chartered **Belmont Finishing Co.**, which will operate a bleach, dye, and finish mill.

Multi-Fabrics Corp., Hillsgrove, R. I., has plans for construction of a one-story addition to the mill.

John Holiday, Jr., is president and principal owner of the newly organized **Penn Tex Mills**, Sinking Springs, Pa., which will manufacture full-fashioned hosiery.

Concord Mills Corp., Manchester, N. H., has merged with **Plaza Mills, Inc.**, which has plants in Selingrove and Beavertown, Pa. Main office for all three units will be in Beavertown.

Joseph W Smith is president and general manager of the **Lackawanna Textile Co.**, Taylor, Pa., a new weaving plant.

A controlling interest in Delaware Rayon Co., New Castle, Del., has been purchased by **Mohawk Carpet Mills, Inc.**, Amsterdam, N. Y. The firm will continue as heretofore, the plant to be given over to manufacture of rayon yarns suitable for use in carpets and rugs.

Langley Engraving Co., Greenville, S. C., was recently organized to operate a dyeing, printing, and processing mill for textile fabrics, as well as yarns, threads, and fibers. Burnet R. Maybank, Jr., is president.

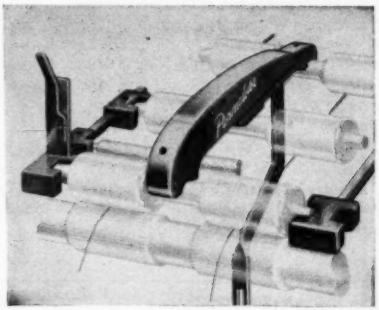
Rocky Creek Mills, Inc., Turnersburg, N. C., has announced that all spinning and other operations will be concentrated in its new one-story building, and the old mill will be used for cotton storage.

A number of looms at **Moore Textile Co.**, Charlotte, N. C., are being converted to cotton duck.

Woolen goods will be manufactured by the recently chartered **Hughes & Co., Inc.**, 286 Summer St., Boston, Mass. Robert H. Hughes is president.

Better Service at Lower Cost

with WHITEHEAD *Permalube* OILLESS BEARING SADDLES and NEBS



Now your mill can use Whitehead Permalube Saddles and Nebs at a first cost that is usually less than for old-fashioned iron saddles and nebs. There never has been a comparison of second costs, for Whitehead Permalube Saddles and Nebs eliminate oil from rolls and yarn, reduce cleaning, won't score the rolls, can't cock or wander. You can install them and forget them.

Over 500,000 Spindles Now Equipped With These SELF-OILING Products

The new, improved Whitehead Saddles are being used in over 150 mills on more than half a million spindles. More and more mills are changing systematically to Whitehead Permalube assemblies exclusively.

Only Whitehead Permalube Products Offer These Money-Saving Features

- Years of trouble-free service
- No oiling of Permalube—Infrequent oiling of Oilite.
- No oil on yarn from top rolls
- Less lint accumulation
- Easier picking—less often
- Very low friction coefficient
- Aluminum bearing holders won't score rolls
- Pivot point permanently adjusted
- Saddle self-aligning. No tilting
- Bearings quickly replaced if ever necessary for only 3c to 5c each

NEW! BRONZE OILITE INSERTS IN PERMALUBE

Now furnished as standard in front saddle and neb bearings.

Solid Bronze Oilite front saddle bearing is also available for extra heavy loads and scored roll necks. (This requires a few drops of oil every few months.)

We have Saddles and Nebs for most all forms of drafting and invite you to

TRY THEM FREE!

Send us a right-hand and center neb and a saddle of the types you are now using and indicate the number you need for one side of your most troublesome frame. We will furnish a complete set of nebs and saddles for one side absolutely free of charge or obligation. But we warn you—once you've tried Whitehead Permalube Saddles and Nebs, you'll want them on all your frames.

Prompt Delivery from Ample Stocks

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Matthews Equipment Co., 53A Broadway, Providence, R. I.
ALABAMA, GEORGIA, MISSISSIPPI
Sam Hogg, Box 4354, Atlanta, Ga.

Correspondence—"Core Testing Wool"

(*Continued from page* 97)

ing is due to the fact that accurate yield of clean wool on a standard basis can be obtained, and the value of the grease wool can then be accurately determined, providing the factors for quality, soundness, and length have been assessed.

"The technological significance of core sampling arises from the fact that a series of small random samples are obtained with the core drill which, in the aggregate, represent the entire population more accurately than samples drawn by any other method devised to date. By procuring this accurate sample the manufacturer can then test it for the processing qualities of the entire lot of wool with a high degree of reliability. He is then aware of the manufacturing performance of this lot of wool in mathematical terms of dyeing, quality, tensile strength, fineness, crimp, contour, and vegetable matter content. With these data he can then plan the most efficient processing procedure for the lot of wool he has tested.

"Yield as determined by the core test is not an important factor in determining the spinnability of grease wool, except from the economic standpoint outlined previously. In other words, the core test will indicate the amount of clean wool available for spinning. Also, as far as I know, the core test cannot be used as an indicator of quality; but it can be used as a method for accurate quality determination as outlined."

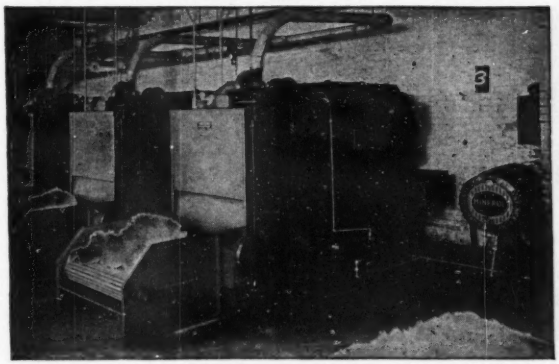
Wartime Difficulties—more maintenance problems

(*Continued from page* 118)

its "share" of the graft whether anything was contributed to the war effort or not. The South is pre-eminently fitted to furnish the military department with textile fabrics, and to a lesser extent, with a few other things, but the South is not at all equipped to deliver many of the things that the defense department has recently been buying, and it is neither wise nor prudent for people in the South to be clamoring for a "share" of the money being spent for defense simply for the sake of spending it.

Everything which the defense department needs should be bought at the best possible price, from the people best equipped to deliver it, and the southern textile mills can do a magnificent job of furnishing textiles as needed if their organizations are not disrupted by the proximity of some alleged war plant which was located for politi-

MINEROL FIRST and FOREMOST CONDITIONING AGENT for Textile Fibres.



● **MINEROL** is a prepared agent for conditioning textile fibres..a systematic Process of Spraying Natural and Dyed Raw Stock. • **MINEROL** helps to separate long fibres from the short. It saves *good fibres* and prevents waste. It makes fibres more supple..more pliable.• **MINEROL** provides *control* of conditions caused by static electricity. It protects the cards and preserves the wire. • **MINEROL** prevents Dust and Fly..safeguarding health and insuring better working conditions.• **MINEROL**..as a conditioner is more urgently in demand thru the increased use of staple Cut Rayon and its varied combinations with cotton, wool and other fibres.

BRETON MINEROL PROCESS

BORNE SCRYMSER COMPANY

Originators of the BRETON MINEROL PROCESS for CONDITIONING FIBRE

ELIZABETH, N. J. | *Established 1874* | CHARLOTTE, N. C.

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SOUTHERN REPRESENTATIVES
W. E. SMITH, Charlotte, N. C. JOHN FERGUSON, LaGrange, Ga. CHARLES KELLEY, Charlotte, N. C. DWIGHT L. WAYNICK, Greensboro, N. C.

ORR SLASHER CLOTH

. . . . WITH SPECIAL CHEMICAL TREATMENT

SOMETHING NEW AND BETTER

Slasher Cloth is an important maintenance item in a cotton mill. With the introduction of ORR *Slasher Cloth with Special Chemical Treatment*, many of the problems which have pestered the slasher room foreman have been eliminated.

The slasher room foreman, in order to satisfy the superintendent and the cost department, must have available a *Slasher Cloth* which will:—

1. Dress the yarn properly.
2. Hold its width. No shrinkage.
3. Maintain level production performance.
4. Start fast—last long.

ORR *Special Treated Slasher Cloth* maintains uniform dressing properties, resists bacteria and steam degradation, maintains dimensional stability.

Discuss your *Slasher Cloth* problem with your ORR representative.

Industrial Woolens by Orr

STARTS FAST— LASTS LONGER

DISTRIBUTED BY

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MANUFACTURED BY

THE ORR FELT & BLANKET CO.

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VANCIDE 20 S

prevents mildew damage in filling yarn

R. T. Vanderbilt Co., Inc.

230 Park Avenue, New York 17, N. Y.

cal rather than production reasons.

Each section of the country has some particular specialty in which it excels. It would be rather absurd to build a cotton mill in Milwaukee or Cincinnati, just because some local promoters thought they could cozen some government bureau into letting them have the money. Those cities are machine tool centers, and are eminently logical places to expand machine tool production. It is almost certain that a modest expansion of production in a plant familiar with a problem can accomplish more than a big splurge by a new plant in an area full of people knowing absolutely nothing about the kind of work involved.

The last war was carried on with incredible waste and extravagance; much of it calculated and deliberate, for the purpose of giving various sections of the country what was considered a suitable "share" of the money which came so easily in the big bond drives, and which could be spent to such great political advantage. That extravagance and waste was responsible for our inflation problems of the present. Only the most strenuous opposition on the part of prudent people can prevent a repetition of this same squanderous profligacy in the present defense effort.

Our last two big wars have proved the indispensibility of the textile industry in wartime. This industry should be maintained in a highly efficient condition. It should not only be permitted to get the relatively small amount of materials required to keep its machinery in good repair, but it should be permitted to keep the skilled workmen equally necessary to keep the machinery properly producing.

The textile industry offers some of the steadiest employment of any industry in the country. The work in the mills is not onerous, and is carried on under good working conditions. Textile plants are usually well heated and well lighted, and are frequently air conditioned. The villages, in the main, are comfortable, and frequently very attractive places to live.

The people who have worked in these mills for years doing useful, and in wartime very necessary, work should of course be available for any other necessary war work which is more important than what they are doing in the mills, but they should not be tempted to give up their useful employment to congregate in idleness in some wretched "boondoggle" which accomplishes little except the wasting of money and effort.

Lubrication of Full-Fashioned Machines

(*Continued from page* 129)

significant to note that the use of such oils containing oxidation and corrosion inhibitors, as well as possessing high film strength characteristics, is to be desired. Good metal wetting and stay-put characteristics are also invaluable. Because of the conditions of temperature and humidity under which they must provide adequate lubrication and protection, they are well worth the slightly higher price they command in the market.

Because of the small clearance between the sinkers, dividers, and jacks in their respective slots (as little as .0005 in.), the use of certain types of semi-fluid lubricants containing soap has given a great deal of trouble within the past three years. This has been caused by separation of oil and soap, thus leaving deposits of soap on the parts and resulting in sinker-head or jack-bed jams that often end in serious machine smashes.

Such cases brought about the recommendation of a twister ring grease for this purpose where older machines are concerned. The one selected was of the soda-lime base type with a maximum soap content of 3%.

At the present time, however, the design has been changed to such an extent that it is possible

AT YOUR SERVICE

The Hubinger technical staff and laboratories are widely recognized for their thorough and practical knowledge of the use of starch for textiles. Their experience assures you of the *best* product, *tailor-made* to fit *your specific needs*. Consult us on any production problem—at no obligation, of course.

THIN BOILING AND TEXTILE STARCHES

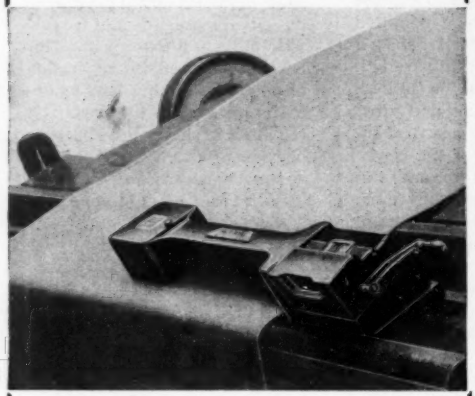
Absolutely uniform and dependable. Careful quality control assures maximum performance in your mill.

THE HUBINGER COMPANY
KEOKUK, IOWA · · EST. 1881

WATCH YOUR INCHES

Give your customer an inch and it soon becomes a yard. One yard on a piece is a mile on 1760 pieces. THERE GO YOUR PROFITS until you adopt the "TRUMETER."

The "TRUMETER" can be fitted to almost any existing Inspection, Plaiting, Winding, Rolling and Doubling machines.



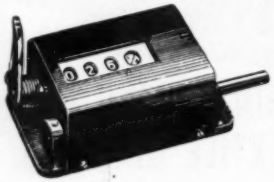
Models available for all types of materials including pile fabrics, carpets, heavy felts, linoleum, and plastics.

Measured by the
"Trumeter"
Quality No. 3
Loom No. 425
YARDS
125¾

Accurate measurement is confirmed by a clearly printed ticket or any mill tag at any point in a run. Counter automatically returns to zero after printing the required number of tickets. Note the vigorous figures—no possibility of error here.

"TRUMETER"

COUNTERS AVAILABLE FOR IMMEDIATE DELIVERY



- **MEASURING**
- **REVOLUTION**
- **PRE-DETERMINED**
- **STROKE**

With Knob or **Quick Reset.**

WHEELS, STANDS, BRACKETS and HINGES supplied to requirements.

Write For Full Particulars

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in card clothing, too..

sharp points yield longer runs

Carders who use Wissco Hardened Point Clothing find that it gives them longer runs between grindings... actually cuts grinding time by as much as 50%.

That's because after this superior Wissco Clothing has been precision set, it is ground to an accuracy of ½ of a thousandth of an inch, then hardened by a special Wissco process... thus assuring points that stay smooth and sharp.

A trial run will show you why more and more mills are standardizing on Wissco Hardened Point Clothing. Write today for detailed information.

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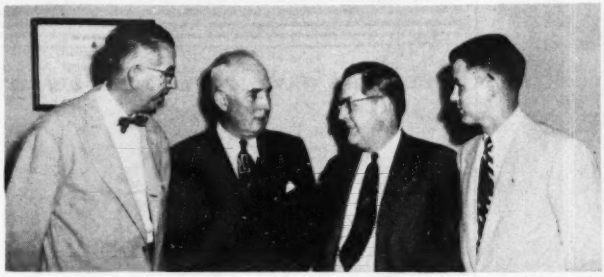
Wissco
CARD AND NAPPER CLOTHING

FOR COTTON, RAYON, WOOL, WORSTED, ASBESTOS AND SPECIALTIES

CF&I

A Product of Wickwire Spencer Steel Division of The Colorado Fuel And Iron Corporation



Swint and Hutcheson Honored by Phi Psi

Sam H. Swint, president of Graniteville (S. C.) Co., and J. L. Hutcheson, Jr., president of Peerless Woolen Mills, Inc., Rossville, Ga., were recently honored when members of Theta Chapter of Phi Psi conferred upon them honorary memberships in the national textile fraternity.

Theta Chapter is located at A. French Textile School, Georgia Institute of Technology, Atlanta, Ga.

In the photo from left to right are: M. Earl Heard, vice-president in charge of research, West Point Mfg. Co. and grand president of the fraternity; Mr. Swint; Mr. Hutcheson; and William E. Turner, president of Theta Chapter of Phi Psi.

to use a high grade light machine oil having washability and non-staining characteristics. Here it is important that the lubrication engineer check the type of equipment against the manufacturer's recommendations or specifications before suggesting the use of a particular type oil for this purpose. Close tolerances between parts preclude the possibility of using soap-filler lubricants in this connection.

Moving parts of the Coulier motion are lubricated by means of the light machine oil mentioned previously.

Warp and Circular Knitters. Warp knitting machines of tricot, Milanese and Raschel types as well as circular hosiery knitting machines will require essentially the same types of lubricants as those required for the operation of the full-fashioned machine.

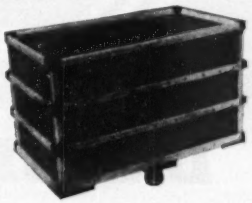
The lubricant used most generally on these machines is the stainless needle oil as specified by the manufacturers of circular hosiery machines. Here the problem is, with particular reference to the knitting of men's half-hose, how to lubricate the machine without staining the goods. The general practice is to use a small amount of oil on the needles with two applications for each 8-hour shift. And where the highest grade of needle oil is used the staining can be reduced to a minimum.

In conclusion, let it be said that proper lubrication of knitting machinery will depend not only upon the type and grade of lubricants used, but upon the personnel engaged in this important operation. It should be borne in mind that the individuals responsible for the lubrication of such equipment should understand its operation and know the respective parts that require lubrication and protection. Such personnel must also appreciate the bad effects that result from careless or sloppy application of lubricants. These machines should be lubricated regularly and according to the time schedule set-up by the manufacturer.

For long and satisfactory

Service

The Excel No. 1000 Fibre Truck



This is a sturdy truck upon which you can depend for long and satisfactory service.

Compare its specifications with those of any other fibre truck.

- .090 vulcanized fibre, securely riveted to hardwood rails with solid steel rivets. These solid rivets are placed at short intervals to prevent buckling.
- Hardwood solid or slatted bottom, sanded to a smooth finish.
- Heavy duty metal top rail.
- Heavy duty metal corners.
- Casters securely bolted to bottom.
- Finished in clear lacquer, or painted, for added protection against moisture.

Representatives:

Mr. N. W. Eurey.....Lincolnton, N. C.
Mr. Paul Eurey.....Lincolnton, N. C.
Industrial Suppliers, Inc.
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Mr. Theodore Huston
2601 N. Broad St. Philadelphia, Pa.

EXCEL

Textile Supply Co.

"Excel Trucks Excel"

LINCOLNTON, NORTH CAROLINA

DARNELL CASTERS

Always

SWIVEL

and ROLL

DARNELL CORP. LTD. 60 WALKER ST., NEW YORK 13, N. Y.
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THE YEARS HAVE PROVEN THEIR QUALITY!

OSA

SANT' ANDREA MACHINERY For Processing Long-Staple Synthetics!

THE trend towards using synthetics for outerwear fabrics requires machines that are specially designed to process *long staple* fibres. Sant' Andrea machines will do this for you with maximum economy — give your synthetic yarns the desirable worsted characteristics. Our many years of experience in this field are at your disposal at all times.

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SANT' ANDREA
NOVARA, ITALY

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Agents for U. S. A.
ERNEST L. FRANKL ASSOCIATES
22 East 40th Street, New York

Personal NOTES ABOUT MEN YOU KNOW

Henry Woodruff Swift, executive vice-president of the Swift Spinning Mills, Columbus, Ga., was elected president of the Cotton Manufacturers Association of Georgia during the organization's convention in Day-

Mr. Swift

tona Beach, Fla., last month, succeeding **L. G. Hardman, Jr.,** president of Harmony Grove Mills, Commerce, Ga. Mr. Swift is the son of **Clifford J. Swift** who has long been active in the work of the association and who served as its president in 1929-30.

Newly elected vice-president of the Association is **J. M. (Mac) Cheatham,** president of Dundee Mills, Rushton Cotton Mills, and Lowell Bleachery South, of Griffin, Ga., and of the Hartwell Mills, of Hartwell and Toccoa, Ga.

Milton L. Davis, Yorkshire Knitting Co., Inc., Brooklyn, N. Y., has been re-elected president of the National Knitted Outerwear Association. New vice-presidents are: **Ingram Bergman,** Bergman Knitting Mills, and **Irving Louis,** Irwill Knitwear.

J. W. Medford, treasurer for eight years, has been promoted to executive vice-president of Springs Cotton Mills. **J. C. Hubbard** was named to succeed Mr. Medford as treasurer, and was re-elected as secretary.

New directors of The Duplan Corp. are **Ralph E. Case** of Stevenson, Jordan & Harrison, Inc., management engineers; **William R. Kaelin,** of Baker, Weeks & Harden, stock brokers; and **Mason H. Bigelow,** senior partner in the law firm of Gould & Wilke.

At its 86th annual meeting, **Arthur Besse** was re-elected president of the National Association of Wool Manufacturers. Three new vice-presidents are **Minot K. Milliken,** Deering, Milliken & Co., Inc., **Abbot Stevens,** J. P. Stevens & Co., Inc., and **Elmer L. Ward,** Goodall-Sanford, Inc.

Lester E. Parkhurst, previously resident manager of Pioneer Mills, has joined American Woolen Co., as resident manager of its Macoma Mills in Lebanon and Baltic Mills in Enfield, N. H.

Roland H. Gray, vice-president of Goodyear Clearwater Mills, has been

Mr. Gray

named resident manager of the Hoosier Unit of Indiana Asenal, located at Charlestown, Ind., and operated by the Goodyear Tire & Rubber Co.

Stuart H. Carroll, treasurer and executive secretary of The Philadelphia Textile Institute Foundation, has been recalled to active duty with the United States Marine Corps. During his leave of absence his duties will be assumed by **Richard S. Cox,** dean of the Institute.

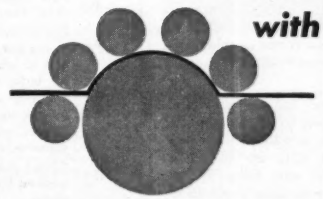
Floyd W. Jefferson, Jr., Iselin-Jefferson Co., Inc., was recently elected to the board of directors of The Association of Cotton Textile Merchants of New York.

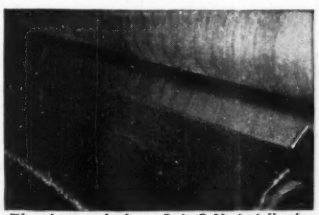
Goodyear Clearwater Mills, Cartersville, Ga., has announced the appointment of **Roy Bethune** as head of

Booth — Originators of STRIP-O-MATIC*

CARD CLOTHING NEWS AND VIEWS

Nylon Spinner Enjoys Runs to 9 Months with STRIP-O-MATIC*





The photograph shows Strip-O-Matic following a 9 months' operation. There isn't any accumulation of stock.

The Wister Spinning Company, manufacturers of fine nylon yarns, had to strip every 2 to 3 weeks with conventional clothing on an 8-hour shift; with 2-shift operation weekly or oftener. Since they have clothed complete sets including cylinders and workers with Strip-O-Matic, they have increased the time between stripping to as much as 9 months. The carders now anticipate being able to run almost indefinitely without stripping. The only down time experienced is for grinding (about every 9 months, only half as frequently as with conventional wire). There is considerably less fibre breaking, and practically no stock loss with Strip-O-Matic.

Research and development is continuously improving Strip-O-Matic for carding all types of fibre including wools, blends, and synthetics. If you have tried only the first Strip-O-Matic manufactured you owe it to yourself to try today's new and greatly improved type. A Benjamin Booth representative will be glad to discuss your specific requirements without cost or obligation.

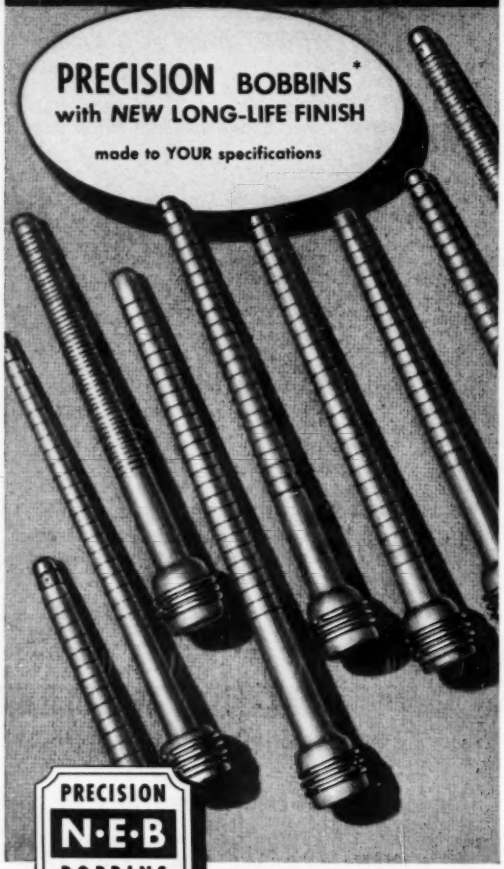
E. A. Supplee Jr.
President

* Patented ®

BENJAMIN BOOTH COMPANY, ALLEGHENY & JANNEY STS., PHILA., PA. Booth

Precisioned to Size — Precisioned for Concentricity
Precisioned for YOUR Spindles . . .

For COTTON and SPUN RAYON



*For SILK and SYNTHETICS — COTTON and SPUN RAYON — WOOLENS and WORSTEDS

Every NEW ENGLAND BOBBIN is tested for concentricity; for smooth, vibrationless running at high speed; to reduce spindle wear. The smooth New LONG-LIFE Finish developed by New England Bobbin & Shuttle Co. withstands heat up to 125°, chemicals in detergents, hard and continuous use. Lasts longer than conventional finishes. Include NEBs in your next requisition — your next order — and compare!

NEW ENGLAND BOBBIN
& SHUTTLE CO.

Makers of PRECISION *Automatic Loom Bobbins*

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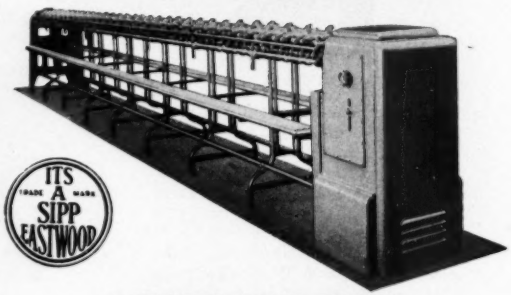
For Perfect Spools at Higher Speeds-

SIPP-EASTWOOD
WINDER-REDRAW

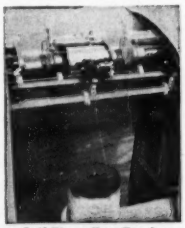


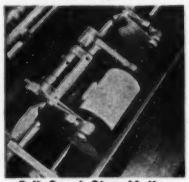
- **SELF-THREADING TENSION**
- **SELF-OPENING SPINDLELESS ATTACHMENT**
- **FULL SPOOL STOP MOTION**

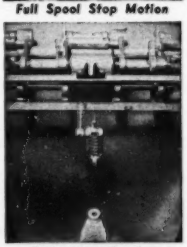
Deliberately designed for perfect spools at higher speeds and greatest possible automatic operation. This brand new winder-redraw requires a minimum of attention during operation and is easy to clean and maintain.

FEATURES:

1. **Washer type self-threading tension** fastened to traverse rail is easily adjustable and quickly cleaned. Eliminates all threading operations.
2. **Gate type tensions** available with self-threading Alsimag guides for nylon.
3. **Full spool stop motion** prevents overrun bobbins.
4. The drive and traverse mechanism is enclosed in one complete unit and is lubricated by a circulating oil bath.
5. Traverse adjustment is independent on each side of machine and can be adjusted from 3½" to 7" traverse without changing cam.
6. Speed changes are readily accomplished through the use of a handwheel.
7. Winds per stroke easily adjustable.
8. Single or double drive self-opening spindleless brackets are available.
9. Easily changed for "S" or "Z" twist by use of reversing switch.
10. Tachometer available for easy speed readings.


Self-Threading Tension


Full Spool Stop Motion


Gate Type Tension

Write for Descriptive Folder

SIPP-EASTWOOD
CORPORATION

Producers of superior equipment for textile processing

45 KEEN STREET, PATERSON, N. J.

Personal NOTES ABOUT MEN YOU KNOW

machine design and research; **Joe Rowland** replaces Mr. Bethune as second shift night superintendent; and **Harold Edwards** transferred from Rockmart to become third shift night superintendent.

J. Craig Smith was recently elected a vice-president of Cowikee Mills, Eufaula, Ala.

Formerly superintendent of the Aragon-Baldwin mill at Rock Hill, S. C., **Dan M. Leister** is now general

Mr. Leister

manager of the Appleton Co., Anderson, S. C. **Lewis Acker** has been made recreational director.

At the annual meeting of Avondale Mills' board of directors, **John Fay** was elected a vice-president and **Thomas R. Bell** was named assistant secretary.

O. L. Moore, Jr., formerly with Robbins Mills, is now general superintendent of the Bloomsburg, Pa., plant of Bloomsburg Mills, Inc.

John M. Bierer succeeds the late J. Newton Smith as president of the Boston Woven Hose & Rubber Co., Cambridge, Mass.

Ames Stevens of Ames Textile Co., Lowell, Mass., has been named consultant on textiles to the Office of Quartermaster General, and will serve as advisor on wool to Major General Herman Feldman, the Quartermaster General.

Robert W. Philip, vice-president and director of research of Callaway Mills Co., LaGrange, Ga., has been appointed to the committee on research of the National Association of Manufacturers.

William J. Brooks was recently appointed assistant to A. U. Priester, Jr., vice-president and general manager of the HDV Division of Callaway Mills Co., LaGrange, Ga.

Four of the J. P. Stevens & Co., Inc., group of mills in New England are now under the supervision of **Walter L. Goddard,** who has been manager of the Hockanum group. The mills are: Stevens in North Andover, Marland in Andover, Merrimack in Dracut, Mass., and Franklin at Franklin, N. H.

Due to ill health, **Herbert Grandage** has resigned from the Spool Cotton Co. **F. B. Hutton** succeeds Mr. Grandage as president of the firm.

F. E. Masland, 3rd, C. H. Masland & Sons, has been appointed assistant to the chief of the floor coverings section, Office of Price Stabilization.

Obituaries

Russell T. Fisher, president of the National Association of Cotton Manufacturers from 1936 to 1950 died on April 24 at the age of 59. Mr. Fisher had been in poor health for some time.

H. Walter Gilbert, president of Cutting Room Appliances Corp., died recently after an illness of six months. Mr. Gilbert was 61 years of age.

John A. McFalls, 70, general superintendent of the Beaunit Mills, Rockingham, N. C., died recently.

W. J. Iselin, 43, vice-president of Iselin-Jefferson Co., Inc., and treasurer of Woodside Mills, Greenville, S. C., was killed on April 10 in an airplane crash near Oakton, Va.

David W. Watson, retired textile executive, died recently in Spartanburg, S. C. Before his retirement, Mr. Watson was associated with a number of mills in Georgia and South Carolina.

Stamey W. Smith, 76, died on April 9 at his home in Gastonia, N. C. Since 1917 until his retirement in 1942, Mr. Smith was associated with the Seminole mill, remaining with the plant when it became a part of Textiles Inc.

for men whose accomplishments entitle them to the better things in life

the suit of SILK

This is a crisp, cool shantung of exceedingly light weight. Probably no other masculine suiting has so luxurious a feel. Superbly tailored by Baker in three summer shades — the new white wine, navy and brown. Strong, resilient and enduring, the silk suit is an excellent investment at $105.

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It won't work...

Why not get the right one for the job?

In buying textile chemicals,
this makes sense too.

Processing is too complex to be adequately served by a conventional product. That's why modern dyers and chemists rely upon a chemical specialty developed by Dexter for their specific operations.

Dexter gives you the right product for the job.

For this reason, Dexter chemical specialties are always at work in America's leading mills.

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TEXTILE CHEMICAL DIVISION

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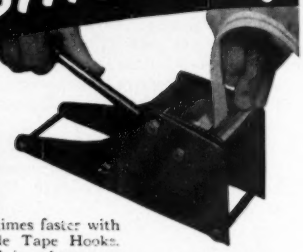
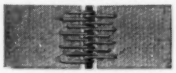


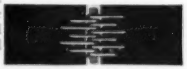
SPINDLE TAPE LACING EQUIPMENT



Lace spindle tapes 10 times faster with Clipper No. 25 Spindle Tape Hooks. Tapes can be prepared in advance so frame is shut down only long enough to place new tape on the pulleys and join ends with connecting pin. Tapes run true—last longer—run smoother—require less tension—VIBRATION IS ELIMINATED

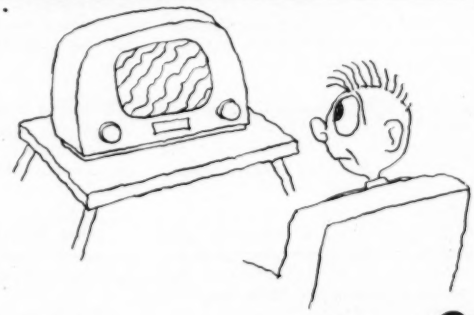
CONDENSER TAPE LACING EQUIPMENT

Lace condenser tapes with Clipper No. 25 Condenser Tape Hooks. Clipper laced tapes, prepared in advance, can be installed in a fraction of the time required for endless tapes. Tape may be purchased in the roll at considerable saving.



CLIPPER BELT LACER COMPANY, GRAND RAPIDS 2, MICHIGAN

Clipper BELT LACING EQUIPMENT UL



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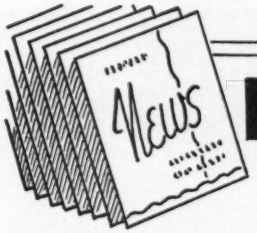

HELPFUL Booklets FREE

Here is the "cream of the crop" of literature on textile subjects as prepared by TEXTILE INDUSTRIES advertisers to aid in mill operation and management. These reference books and catalogs are free for the asking and there is no obligation involved. Read through the list carefully for booklet on one subject or new Equipment in which you are interested. Then fill in the numbers of those desired on the coupon on page 218 and mail it to TEXTILE INDUSTRIES. ("First Listings" shown below are not confined solely to TEXTILE INDUSTRIES advertisers).

This service is restricted to those engaged in operation and management of textile industries

First Listing of New Publications

6-1. Loom Leathers. An unusual presentation derived from an obviously exhaustive research undertaking has been achieved by Graton & Knight Co. and its affiliate, Dixie Leather Corp., in their new 24 page catalog of "Orange Line" Textile Leathers. Stroboscopic photographs, taken at Lowell Textile Institute, show loom parts stopped in action which the naked eye cannot record. Illustrative and text treatment parallel the story by comparing the action of leather parts with the components of athletic teams. Graton & Knight Company, Worcester, Mass., and Dixie Leather Corporation, Albany, Ga.

6-2. Viscosity Packet. Packet of latest information on the general subject of viscosity, including descriptive literature of the latest Brookfield Viscometers. Describes how to make accurate viscosity determinations with slide-rule speed. Brookfield Engineering Laboratories, Stougton, Mass.

6-3. Sound Film Catalog. Seventy-two sound films that cover general interest subjects, product information, and training and instruction courses are listed in a new 1951 sound-film catalog, B-4761. All films are loaned free to organized groups, such as church, social, professional, civic and business. Cost of transportation must be paid by borrower. Westinghouse Electric Corporation, Box 2099, Pittsburgh 30, Pa.

6-4. Dynel Staple Fiber. Dynel, the new man-made fiber, is described in a colorful, eight-page pamphlet. Divided into two parts, the first deals with the physical and chemical properties of Dynel and the second discusses these properties in terms of their value in fabrics. Information on price and standard sizes and lengths of Dynel staple is also included. Carbide and Carbon Chemicals Company, Room 308, 30 East 42nd Street, New York 17, N. Y.

6-5. Doroplast Coating. Brochure describing this protective coating for wood, metal and concrete. This 100% thermosetting resin is described as being built to meet the specific problems of the textile industry, and is described as forming a smooth, tough surface which is abrasion-proof, acid-proof, alkali-proof, water-proof, vapor-proof and solvent-proof at temperatures up to 350° F. Easy, economical, "on the job" application at room temperature described. Morris Textile Equipment Corp., Arcade Bldg., Glen Ridge, N. J.

6-6. Exhaust Fans. Folder describing the "Crystal-Aire" line of industrial exhaust fans which are made in sizes from 5000 to 23,000 C.F.M. Industrial wall package units shown, along with the automatic wall and ceiling shutters. Franklin-Morgan Company, Inc., P. O. Box 391, Charlotte 1, N. C.

6-7. Materials Handling. A new comprehensive catalog of material handling equipment which includes a general description and application data on Yale's gas and electric fork lift trucks, motorized hand trucks, hand lift trucks, and hand and electric hoists. Also describes the various attachments for Yale industrial trucks that give them versatility in jobs performed. Forty-four pages of well illustrated information. Yale & Towne Manufacturing Co., Philadelphia, Div., 11000 Roosevelt Boulevard, Philadelphia 15, Pa.

6-8. "Protecting Your Company's Security." Communist sabotage held threat to all businesses, therefore this 13-page "blueprint" is being distributed by the Research Institute of America. Methods of determining degree of vulnerability; policy adjustments; setting up security program; selecting and installing security officer; tracking down Communists, fellow-travelers, espionage and sabotage; working with the union; getting help from Government Agencies, and the supervisor's or foreman's part in carrying out security measures fully described. Member Relations Division, Research Institute of America, Inc., 292 Madison Ave., New York 17, N. Y.

6-9. Piping Pointers. New manual covering the fundamentals of sound piping practices in easy-to-grasp, non-technical language, uses of the various types of valve designs with illustrations of more than 80 kinds of fittings. More than half the 36-page manual is devoted to "how-to-do-it" features that are fully illustrated for easy understanding, along with a valve selection guide. Crane Co., 836 South Michigan Ave., Chicago 5, Ill.

6-10. Textile Applications. The current issue of "Dyestuffs" published by National Aniline Division carries an interesting article describing the many textile applications developed for the synthetic detergent, Nacconol NR. Written for "Dyestuff" by Dr. O. M. Morgan, National Aniline Division's director of Detergent Application Research, and a well-known authority on synthetic detergents and their applications. Described are new methods which can lead to marked increase in production with savings in processing chemicals, fuel and water, the three important items in wet processing of textiles. National Aniline Division, 40 Rector Street, New York 6, N. Y.

6-11. Spring-Master. Brochure describing this new device which converts the ordinary tool shop drill-press into an efficient spring-making machine. The chief appeal of this device is its simplicity of operation, therefore, for those producers who are inevitably faced with spring-breakage, Cycloid's "Spring Master" is the immediate answer to these problems of continuous production. Cycloid Corp., 12 Newhall Ave., Saugus, Mass.

CONSERVE YOUR QUILLS!

Use the

NASH "79" QUILL POLISHER

to relacquer worn quills

You need not discard your old loom bobbins because they are worn or have slight surface imperfections. They can be sanded smooth, and re-coated with finishing material.
If your quills are in good condition, the conventional way of using the Nash No. 79 with steel wool pads, special polish and burnishing pads will produce a perfect surface finish, preventing filament breakage or transfer of dirt to the yarn.
Failure of the finish coat calls for a complete re-finishing operation on the body of the quill, and the Nash relacquering attachment was developed to meet this need.

Lacquers 30 to 35 Quills Per Minute

With the relacquering attachment just developed for use with the Nash No. 79 Quill Polisher, you can apply a new coat of Lacquer or else a shellac and oil finish—automatically at 30 to 35 bobbins per minute. The attachment is easily attached or removed.

Write for descriptive material on the Nash No. 79 Automatic Quill Polisher and Relacquering attachment.

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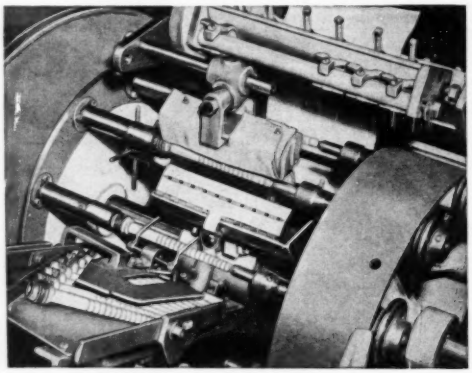
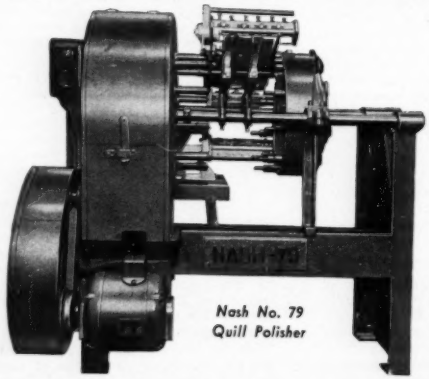
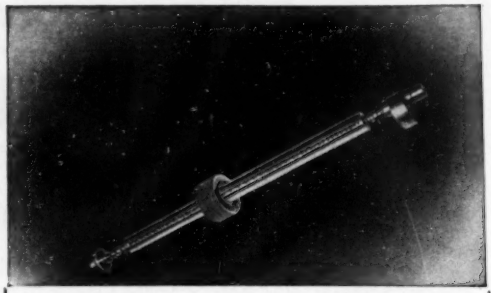
Close-up of Relacquering Attachment





Nash No. 79 Quill Polisher



NEW ROY Internal Ball Bearing Cotton Traverse Grinder gives you smoothest grinding action ever known. The grinding wheel floats back and forth across the tube giving the wire a breezing touch action and accurate side grind.

This advantage—the result of long experimentation with various types of ball bearings—means added years of service when properly installed in a new as well as an old grinder.

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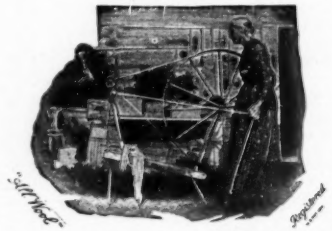

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ENDLESS BLANKETS RAYON SLASHER JACKETS
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GENERAL, ECONOMIC, MANAGEMENT

5 **FACTORING AND FINANCING**—Illustrated booklet on how factoring works, cost and credit information. —TEXTILE BANKING COMPANY, New York, N. Y.

7 **RAYON TELLS ITS STORY TO THE PUBLIC**—Folder containing reprints of advertisements explaining some of the many roles in which rayon is serving the American public. — AMERICAN VISCOSE CORPORATION, New York 1, N. Y.

10 **"LABOR AND MANAGEMENT BENEFIT BY INDUSTRIAL ENGINEERING PRINCIPLES"**—8 page illustrated folder outlining principles of industrial engineering as they apply to textiles.—AMERICAN ASSOCIATED CONSULTANTS, INC., New York, N. Y.

13 **BROCHURE** describing financial service to speed turnover of working capital; credit service for sales expansion and credit loss elimination. — WILLIAM ISELIN & CO., INC., New York, N. Y.

14 **TEXTILE WEIGHT CONTROL**—Forms 2009 and 2010, showing how Toledo Printweight weight records cut costs by eliminating human errors at the scales. Special purpose scales for the Textile Industry fully discussed.—TOLEDO SCALE CO., Toledo, Ohio.

PLANT AND PLANT MAINTENANCE

102 **"TANK TALK"**—Sixteen page booklet of illustrations showing various types of elevated steel tanks constructed and erected by manufacturers as well as stand pipes, reservoirs, storage and high pressure vessels, cylinders, along with helpful technical data. Also a list of what a few of the cotton mills, etc., said.—R. D. COLE MANUFACTURING COMPANY, Newnan, Ga.

105 **DRY CHEMICAL**—Brochure describing the Keefe fixed-system dry chemical fire extinguisher which is designed to control waste fires. Ideal for concealed areas where fires are likely to occur. — KEEFE AND COMPANY, Atlanta, Ga.

107 **FINNELL SCRUBBERS** — Illstrated leaflets describing and giving specifications for the Finnell floor scrubbing machines.—FINNELL SYSTEM, INC., Elkhart Ind.

109 **CARD STRIPPER**—Portable dustless card stripper described in bulletin 1050. Advantages of dustless stripping when combined with thorough brush stripping. Used alone or with other systems discussed.—PARKS-CRAMER CO., Fitchburg, Mass., and Charlotte, N. C.

119 **MOPPING EQUIPMENT**—Complete catalog and circulars containing information on the many sizes and styles that can be had.—S. C. LAWLOR CO., Chicago, Ill.

129 **UNIT HUMIDIFIERS**—With evaporative capacity up to 12 gals. per minute, described in catalog 2A. Requires only simple installation connections—for single or multiple installation with automatic controls, according to the catalog.—THE BAHNSON COMPANY, Winston-Salem, N. C.

133 **PAINTING SPECIFICATIONS AND COLOR CHIPS**—Industrial Paint and Color Guide, CC446, gives full painting specifications for exterior and interior of industrial plants with complete color samples.—THE SHERWIN-WILLIAMS CO., Painter Maintenance Div., Cleveland, Ohio.

POWER TRANSMISSION, MOTORS, BELTING, LUBRICATION

203 **TREADED LEATHER BELTING** — This 16-page booklet describes Houghton's line of patented, specially treated leather belting for all types of power transmission. Booklet includes valuable engineering and maintenance section.—E. F. HOUGHTON & CO., Philadelphia, Pa.

216 **LEATHER BOOKLET NO. 202**—Attractive book illustrating and describing BONDARON Special Tanned Leather as used in various forms such as Check Straps, Solid Round Leather Belting, Flat Belting.—CHAS. BOND CO., Philadelphia, Pa.

263 **NEEDLE ROLLER BEARING**—Catalog Engineering and Application Data Edition 32A contains full data on selection of proper Needle Roller Bearings and outlines uses of such in various industries, including textile uses, types, installations, lubrication, etc.—TORRINGTON COMPANY, Torrington, Conn.

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Sam Cam says:
From PRECISION only—exclusive formula, NON-SLOUGHING Cams (standard or special) for spinning and twisting—at no EXTRA COST—providing amazing, up-to-4 way, yarn control. Get "jewelled movement" ring rail reversing, longer lived accuracy—no sloppy backlash, due to Cams. Build firmer, longer running, higher speed bobbins. Cut your time and costs. No other cams are made with this mathematical accuracy. Write for our Cam Computation Chart and full information, now!
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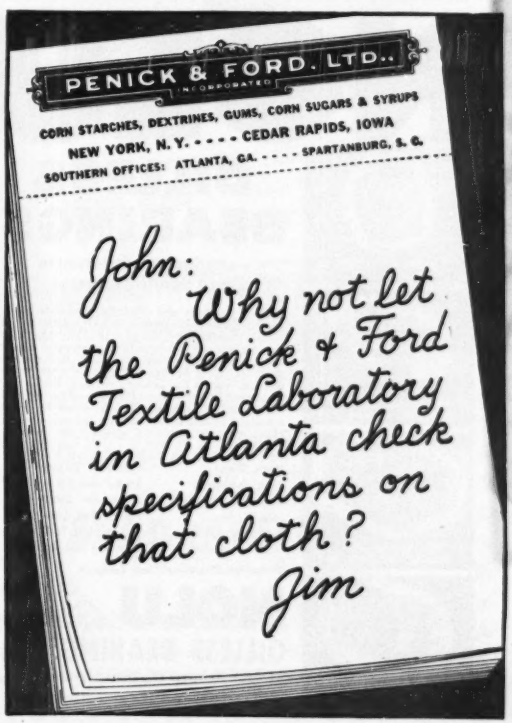
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John:
Why not let the Penick & Ford Textile Laboratory in Atlanta check specifications on that cloth?
Jim

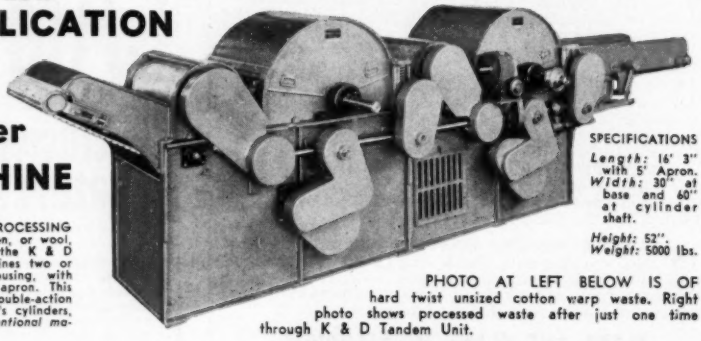
You Can Now Whip the "Hard Waste" Problem

with this new

TANDEM APPLICATION

of the **K&D**

Single Cylinder WASTE MACHINE



SPECIFICATIONS
Length: 16' 3" with 5' Apron.
Width: 30" at base and 60" at cylinder shaft.
Height: 52".
Weight: 5000 lbs.

DESIGNED TO MEET THE NEED FOR PROCESSING unsized "Hard Waste" in cotton, rayon, or wool, this new TANDEM APPLICATION of the K & D Single Cylinder Waste Machine combines two or more single-cylinder units in one housing, with only one feed apron and one exit apron. This TANDEM APPLICATION, providing double-action waste processing on each of the unit's cylinders, is far *more efficient than bulky, conventional machines with twice as many cylinders.*

PHOTO AT LEFT BELOW IS OF hard twist unsized cotton warp waste. Right photo shows processed waste after just one time through K & D Tandem Unit.

THE MILL* WHICH SENT THE "HARD WASTE" SAMPLE shown at right ordered one K & D TANDEM UNIT immediately after we ran their samples. They were so pleased with their installation that they have already ordered additional units!

*(NAME OF MILL ON REQUEST.)

BEFORE AFTER

WRITE, WIRE OR TELEPHONE for details of uses, cost, and installation of the new Tandem Application of the K & D Single Cylinder Waste Machine.

Kirkman & Dixon

MACHINE SHOP AND FOUNDRY

Greenwood, South Carolina

MANUFACTURERS OF K & D Single Cylinder Waste Machines, F-5 Hopper Feeders, in any width, Sargent Combs for Hopper Feeders.

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— reduce maintenance and spoilage costs!

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NOLU bearings and other parts are essential for maximum economy in the operation of all textile machinery! These low cost, carefully machined, oil-impregnated, hardwood parts are clean and dry to the touch but release their locked-in lubricating oil only when shaft friction warms the bearing surface. Excess oil is immediately reabsorbed. Genuine NOLU Bearings and parts are kept in stock for most standard textile machine installations. Special types can be produced quickly for any installation.

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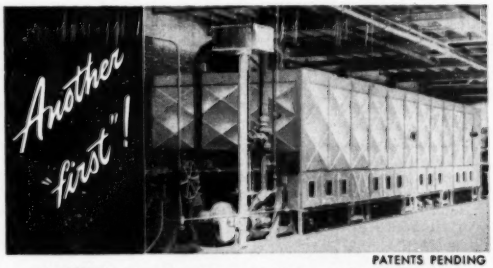
INDUSTRIAL ENGINEERING CO., KERSHAW, S. C.



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Greatly increased efficiency! For example: *40* linear feet of "Una-Ray" Oven equal the productive capacity of *70* feet of a conventional oven-type. Saves thousands of dollars in equipment cost and operational economies. No burning, scorching, spotting or marking of goods. No crocking. No "gas fading" or color migration. Uniform color is insured.

A general-purpose oven (of any capacity needed) that provides accurately-controlled working temperatures up to 550°F. For drying; drying and curing in one operation; resin fusing; Nylon setting, etc. *Write for Bulletin* C-6.

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269 **LUBRICATION AND MAINTENANCE OF BALL AND ROLLER BEARINGS**—Illustrated bulletin describing efficiencies and economies of Non-Fluid oil for all types ball and roller bearings.—NEW YORK AND NEW JERSEY LUBRICANT CO., New York, N. Y.

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INSTRUMENTS, STEAM SPECIALTIES

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CARDING, SPINNING, WINDING

401 **LUMMUS DUSTLESS, STEEL BLENDING FEEDERS**—Bulletin describing automatically closing, positively locking door on feeders to prevent overloading, choking.—ALDRICH MACHINE WORKS, Greenwood, S. C.

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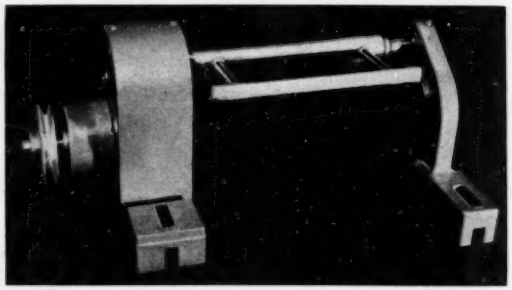

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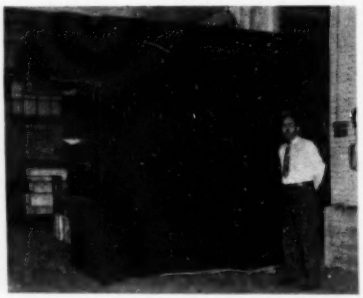

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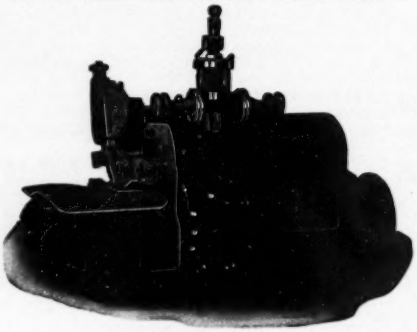

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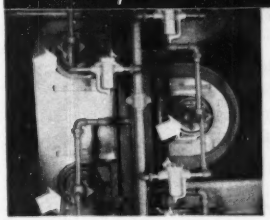

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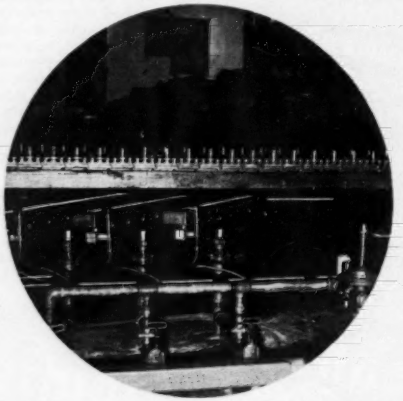

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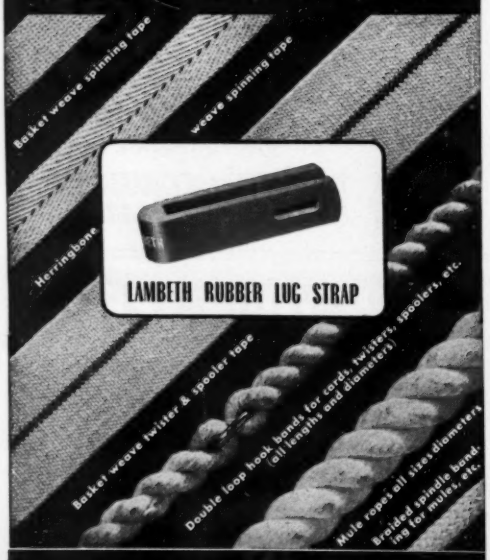
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641 **PACKAGE DYEING**—Machines for dyeing, extracting, and drying yarn in package and on beams described in illustrated booklet on the theory of package dyeing and equipment for this process.—SMITH, DRUM & CO., Philadelphia 33, Pa.

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780 **HYDROGEN PEROXIDE**—Compilation of physical data and properties of hydrogen peroxide. Reaction listed in organic and inorganic chemistry along with application.—BECCO SALES CORP., Buffalo, N. Y.

KNITTING

801 **THE WILDMAN SINGLEHEAD FULL-FASHIONED HOSIERY MACHINE**—Literature on request from the WILDMAN MFG. CO., Full-Fashioned Division, Norristown, Pa.

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MISCELLANEOUS

1101 **AUTOMATIC BOBBIN REFINISHER**—A descriptive bulletin illustrating and describing method of refinishing throwing bobbins on a production schedule.—J. M. NASH COMPANY, 2300 N. 39th St., Milwaukee, Wis.

1102 **BALING PRESSES**—An illustrated folder describing this manufacturer's complete line of balers for all materials. Both Downstroke and Upstroke models.—ECONOMY BALER CO., Ann Arbor, Mich.

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1107 **AUTOMATIC QUILL POLISHER**—Bulletin describes production machine for refinishing loom bobbins. Tells how quills can be kept in perfect condition at minimum labor cost.—J. M. NASH CO., 2360 N. 30th Street, Milwaukee 10, Wis.

1106 **ILLUMINATED MAGNIFIER**—Folder showing how Pike Flash-O-Lens is used in textile inspection; illustrated to show various models including the Pike Master Magnifier Set.—E. W. PIKE CO., Elizabeth 3, N. J.

1108 **FABRICATION OF U. S. STAINLESS STEELS**—136-page book covering use of stainless steel in textile equipment from cutting to cleaning. Includes corrosive-resistance tables for chemicals.—CARNEGIE-ILLINOIS STEEL CORPORATION, Pittsburgh, Penn.

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1117 **CUSTOM MADE THREAD GUIDES**—Illustrated booklet describing uses and physical properties of the "AlSiMag" line of Thread Guides. Advantages fully discussed with picture and specifications of each type.—AMERICAN LAVA CORP., Chattanooga 5, Tenn.

TEXTILE INDUSTRIES, 806 Peachtree St., N.E., Atlanta 5, Ga.

Please send me, without obligation, free booklets or further information on New Equipment items described in the June, 1951, issue of TEXTILE INDUSTRIES.

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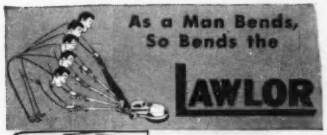


The adjustable handle makes it possible to scrub and wax polish in congested places where hand cleaning had been necessary before — around and under machines, counters, desks, lockers, etc.

Operator can raise or lower handle to any angle within an 80 degree arc and shove the Lawlor under any equipment where there is at least a 9½ inch opening and as far back as 4½ feet.

Three Models— a size to suit every need

ANOTHER POPULAR LAWLOR

The Model 20-D is designed for large areas. It does everything in one operation: deposits clean water over the soaped floor, a 19" revolving brush scrubs it thoroughly; then a rubber squeegee mops up the dirty water, which is vacuum pumped into a second tank. The Model 20-D is only 22" wide and can be used around machines and equipment. The nice thing is that one person can easily operate it.

MOP WRINGERS

Quality built of all steel with perforated rolls. Foot lever operation. Made for one or two pails.

MOPPING TANKS

Made of heavy galvanized steel with welded seams. Two compartments, each with shut-off. Foot-pressure wringers. 30 or 60-gallon capacity.

All Lawlor Equipment is sold and serviced by local Janitor Supply Houses

Write for Catalog of complete line

S. C. LAWLOR CO.

Quality Floor Equipment for 50 Years

121 N. Aberdeen St., Chicago 7, Ill.

News in Brief

(Continued from page 83)

LaFar Heads Carded Yarn Group. D. R. LaFar, Jr., president of the LaFar chain of mills with headquarters in Gastonia, N. C., has been elected president of the Carded Yarn Association, Inc., succeeding E. Owen Fitzsimons who resigned as head of the association because he finds that under circumstances now prevailing as a result of the stabilization program, interests of the association would be better served if its chief executive officer were a cotton mill official. Mr. Fitzsimons will serve as executive-vice-president and treasurer. Also named a vice-president of the group was J. Craig Smith, executive vice-president of Avondale Mills, Sylacauga, Ala.

Wool Blends for Uniforms. To assist in the Department of Defense wool conservation program, the armed services are reported to have ordered mandatory blending of wool uniform fabrics. The Marine Corps has specified that all woolen and worsted fabrics procured in the future will contain 15% "Dacron" or "Orlon" acrylic fiber; also, manufacture of tropical worsted uniforms for wear by its enlisted personnel has been suspended. The Navy is evaluating dress melton of 70% wool, 20% rayon, and 10% nylon. Army has adopted a 16-oz shirting fabric with 15% nylon, it is reported.

Walker Heads Textile Deans. George Walker, president of the New Bedford (Mass.) Textile Institute, was elected president of the National Council of Textile School Deans at the spring meeting of the group held at West Point (Ga.) Manufacturing Co. He succeeds Richard S. Cox, dean of Philadelphia (Pa.) Textile Institute. Herman A. Dickert, dean of the A. French Textile School, Georgia Institute of Technology, was elected vice-president, filling vacancy created by elevation of Mr. Walker.

Silk & Rayon Dyers Set Up Management Aid Unit. A management

Save "Man Hours"

Every time you use Selig's

FLOR-O-SEAL FLOR-TONE

Dry Maintenance Method

Man-hours mean more today than ever before. Penetrating FLOROSEAL keeps moisture, oil and grease from damaging floors while FLORTONE prevents dirt and grit from being ground into the floor surface. This sealer-maintenance method makes every man-hour count for cleaner, safer, brighter and longer-wearing floors at lower cost.

The Selig Company

Manufacturing Chemists

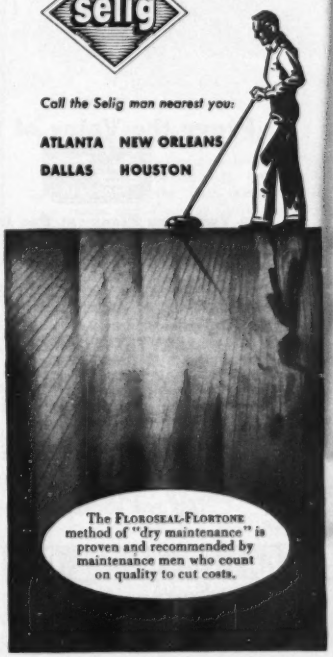
Since 1896

Selig

Call the Selig man nearest you:

ATLANTA NEW ORLEANS

DALLAS HOUSTON



The FLOROSEAL-FLORTONE method of "dry maintenance" is proven and recommended by maintenance men who count on quality to cut costs.

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- Stainless Steel Weldments
- Heat Recovery Systems
- Circulation Systems
- Kiers — Steel or Stainless
- Top Dyeing Equipment
- Allen Heaters
- Continuous Steamers
- Jacketed Vessels
- Sampling Kiers
- Stainless Steel Dyeing Equipment
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William Allen Son's Company
Worcester 8, Mass.

AMERICAN YARNS

For Knitting or Weaving
AMERICAN DURENE
Highest Quality Mercerized Yarn

NATURAL YARNS
Combed Peeler or Sak. 10's – 90's Single Combed Peeler or Sak. 10's – 100's Ply

Selling Agents for **EFIRD MANUFACTURING COMPANY** Knitting Yarns
Combed, 10's – 50's Carded, 8's – 30's

THREAD DIVISION · LAWRENCEBURG, KENTUCKY

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A printing thickener that produces the greatest possible color value and efficient working qualities at low cost.

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A warp sizing softener and lubricant for rayon, acetate, staple and cotton fibres. A concentrated, efficient and versatile material that does the job thoroughly—and economically, too.

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HOFMANN

In addition to our customary services, we are now distributors of the MAYER HIGH-SPEED WARP-KNITTING LOOM, which created great interest at the Atlantic City Exhibition. This machine is of novel and advanced design for Speed, Versatility and Production Economy in the manufacture of Tricot Fabrics.

Write for particulars or visit us for demonstration.

MICRO REG. TRADE MARK

ALFRED HOFMANN PLANTS
WEST NEW YORK, NEW JERSEY
SUPPLIERS TO THE TEXTILE TRADE FOR OVER 25 YEARS

News in Brief

trouble-shooting department has been established by the Silk & Rayon Dyers Association of America. Charles A. Grant, manager of the association's New York office, will be in charge of this service which will include cost engineering and methods, machine efficiency studies, simplification and design of forms, distribution and overhead charges, etc.

Developments in Spinning. Spinning equipment buyers, under pressure for new equipment which fills the bill for flexibility, very shortly might have half a dozen or so new machines to select from in addition to commonly known standard models. Available now or to be introduced are: the McCann pot spinner, the Bird spinning system and draft range (Saco-Lowell is reported to be turning out a limited number of frames for Collins & Aikman), the Ambler super draft range (McGlynn Hays has U. S. manufacturing rights), a still secret Uxbridge Worsted Co. draft range (believed purchased from Avery Worsted), a draft range under wraps at Abbot Worsted Co., the Prince-Smith pot spinner developed in England, and Stellite's superdraft for porcupine finishers.

Fiber Glass "House." A "house" to protect all the delicate radar equipment, 37 ft high and 54 ft in diameter, has been made by Goodrich of compounded rubber and fiber glass. The housing may be inflated.

Don't Forget Safety. Pointing to the stress in meeting defense production quotas, the National Safety Council directs employer attention to the importance of safety and safety training for supervisory personnel.

Nationwide Lab Program. A nationwide interlaboratory program is being sponsored by American Society for Testing Materials to provide a basis for more standardized use of instruments in the analysis of cotton fiber. Over half of the firms and agencies in the U. S. known to possess Fibrographs, Micronaires, or Pressley fiber testing instruments have accepted invitations to participate in the program.

Double Duty Towel. Recently placed on the market was a towel that combines the features of a terry towel and a huck towel into a single item. Developed by John K. Ottley, Atlanta, Ga., advertising executive, it takes a conventional bath towel shape and except for the wide bands of smooth fabric on both ends of the terry cloth it looks like an ordinary towel. Said Mr. Ottley regarding use for his invention, "When a man shaves, for instance, he has to hang onto two towels—one to dry his face and one to catch hidden areas of shaving lather. He needs a terry towel and something as soft as a hand towel to come out with a clean and neat shave."

Cotton and Synthetic Rugs. Recent experiments by the cotton tufted textile industry indicate that unusual decorative effects can be produced by using synthetic yarns in tufted products. Du-Pont's Fiber E tufted into a duck rug background in patterns alternating with rows of cotton yarn produce a different color from the cotton when the entire piece is dyed. Also, a pleasing surface contrast is obtained.

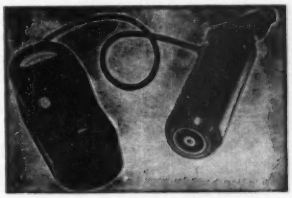
Korea Combat Film. The United States Army film, "The First Forty Days," a 25-minute, 16-mm black and white picture of the Korean War is available for public use through Army film library centers. It is a photographic record, filmed under combat conditions, of the American soldier in overcoming serious handicaps in the initial phases of the war.

Textile Film Aids Immigration in Canada. Filmstrips produced by the Primary Textiles Institute will be shown overseas by Immigration Department settlement officers with the object of giving prospective immigrants some knowledge of the textile industry in Canada.

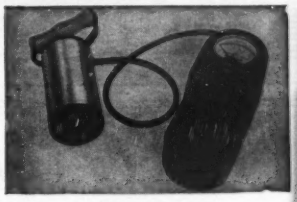
2 Great Models for

TESTING MOISTURE CONTENT

in
- Wool
- Cotton
- Rayon and
- Nylon



MODEL PD-1
for textiles in loose or compressible forms—3" penetration.



MODEL K-2
for textiles in cones, rolls, beams and similar forms.

10-DAY FREE TRIAL!

Try one of these moisture testing instruments for 10 days—use it, test it and prove its superiority. Send samples, moisture range and Purchase Order to cover trial period. No obligation!

Quick, Accurate Readings

In less than 3 seconds you can test moisture content of practically all types of textile materials, including cotton, wool, rayon and nylon in fabrics, packages and loose forms.

This portable instrument is designed for "on the spot" checks in your plant. Moisture Register is easy to operate—requires no technical knowledge or complicated figuring. Cost is negligible in comparison to advantages. Write today for complete details. Specify type of material to be tested.

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Moisture Register Co.
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A Knotless, High Tensile, High Speed Machine Sewing Thread
Thomaston
PEDIGREE
MACHINE THREAD
Available in 10s and 12s in 3, 4, 5, and 6 ply—16s and 20s in 3 and 4 ply. Put up on 2½ lb. or 16½ lb. knotless cones.
A high quality thread for your bag-closing operation. Also particularly adaptable for use in WOOLEN MILLS for tacking thread and COTTON MILLS and BLEACHERIES for seaming thread.
SPECIFY • PEDIGREE
Product of
THOMASTON MILLS
Thomaston, Ga.
"ATLAS" and "CHAMPION"
Medium Grade Knotless Threads also available—in 10s and 12s in 3, 4, 5 and 6-ply. Both on 2½ lb. Knotless cones.
also manufacturers of numbered duck, cover duck, cover cloth, hose and belt duck, and chafer fabric
DEPENDABLE
THOMASTON
Thread

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*T.M. Reg. U. S. Pat. Office

SUPPLIERS News
WHAT THEY ARE DOING

The B. F. Goodrich Co.'s research center, which was opened in 1948, is now in process of being enlarged.

J. Kenneth Sumner, formerly with National Ring Traveler Co., has joined the sales staff of **Standard Mill Supply, Inc.**, Charlotte, N. C.

Warehouse facilities, general offices, and laboratories of the Chattanooga, Tenn., branch of **American Aniline Products, Inc.**, are being housed in a newly constructed building at 4001 Rossville Blvd. Joe T. Bohannon, Jr., is manager of the new branch.

Alan Mayer succeeds Walter Spencer, resigned, as mid-western sales representative for **Arnold, Hoffman and Co., Inc.** His territory is composed of Ohio, Illinois, Indiana, and northern Kentucky, and Mr. Mayer will make his headquarters in Cincinnati.

The **H. F. Livermore Corp.**, Boston, Mass., has announced the appointment of James R. Hood as manager of its warehouse in Greenville, S. C. Before joining this firm, Mr. Hood was connected with the Woodside Mills in Easley, S. C.

C. W. Hollingsworth, former manager of "Unbrako" socket screw division of **Standard Pressed Steel Co.**, has been made divisional sales manager, with Raymond N. Gruber succeeding him in the socket screw division.

Eriez Manufacturing Co. has announced the appointment of Earl C. Miller as executive assistant to R. F. Merwin, president. M. L. Cramer has been promoted to sales engineer; Emerson J. Tenpas, development engineer; and W. L. Lukowski, design engineer.

Taylor Instrument Co., which started as a small partnership for making household thermometers and barometers, celebrates its 100th anniversary this year as a multi-million dollar corporation manufacturing some 8000 variations of its basic products.

Charles R. Schmitt, formerly lubrication manager for the central and western divisions of **E. F. Houghton & Co.**, is now manager of the lubrication sales department, and will have his headquarters in the firm's main office in Philadelphia.

Morse G. Dial has been made executive vice-president of **Union Carbide and Carbon Corp.**, and George O. Curme, Jr., was elected vice-president in charge of research. Chester A. Strodl has joined the textile fibers department of Carbide and Carbon Chemicals Co., a division of Union Carbide, to assist in sales development work on the use of dynel in the knitting trades.

Mr. Strodl

New York & New Jersey Lubricant Co. celebrated its 55th anniversary on April 21.

Bernard W. Crowe, formerly associated with George Royle & Co., Callaway Mills, and a Deering-Milliken worsted plant, is now with the **American Cyanamid Co.**, textile fiber research group at the firm's Stamford, Conn., research laboratories.

J. A. Funk has been appointed to the sales staff of **Emery Industries, Inc.**, handling the sale of chemical products in southern Ohio, southern Indiana, and eastern Kentucky. William J. Siemens, Jr., will service western Pennsylvania, West Virginia, and western New York. These territories were formerly serviced by E.

quality that counts from spindle to loom

DANDUX

canvas baskets, boxes & trucks

Doff, wind, condition, store—you save more, longer, with Dandux baskets on the job.

C. R. DANIELS, INC.

121 E. Third St., Charlotte 2, N. C.
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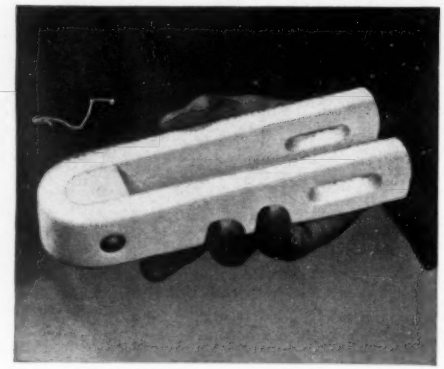
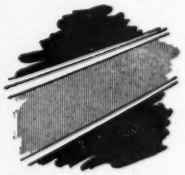
Presenting the HARRIS "Heavy Duty" Lug Strap



Pick Arm Lug Straps
Leather and Fibre Straps
Harris Loom Cord
"Wirecore" Loom Cord
Improved Dobby Bars
Dobby Pegs

RICE DOBBY CHAIN CO.
Millbury, Massachusetts
Southern Representatives
R. E. L. HOLT, JR. ASSOCIATES Jefferson Bldg. Greensboro, N. C.

Salvage Your Rusty Reeds The LOW-COST Oakite Way



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This mildly acidic compound thoroughly removes light rust deposits. At the same time, it provides a protective phosphate coating that serves to ward off rust attack.

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HEADQUARTERS IN THE SOUTH FOR HYDRAULIC MACHINERY

Introducing the
New, Modern Streamline SD HYDRAULIC OIL CYLINDER

The most "trouble-free" cylinder on the market today! Years of field experience and engineering "know-how" have made possible this improved cylinder design. Simplified two-piece screw-on design allows easy change of mounting; circular end castings eliminate all assembly bolts; dirt catching piston seals; heavy wall seamless steel tubing eliminates porosity; no resultant leakage as "O" Ring Gaskets seal with pressure; built-in internal relief valves—these are but a few of the features.

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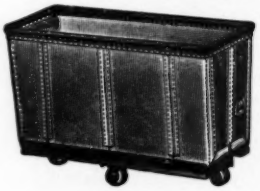
fine equipment for fine mills



Style 28

LANE
Canvas Trucks

So smooth—so light—so easy running, and so long lived.

A variety of caster types available.

Write for Catalog No. 1

W. T. LANE & BROS., Inc.
Manufacturers
Poughkeepsie, N. Y.

G. Hibarger, now district manager of the firm's new Chicago office.

Carl Welch recently joined **Oliver D. Landis, Inc.**, Charlotte, N. C., as representative, with headquarters at Gastonia, N. C. He may be reached by addressing him at P. O. Box 302, Gastonia.

James W. Anderson was recently elected vice-president in charge of

Mr. Anderson

sales for **Whitney Chain Co.**, and C. Robert Powers was made vice-president in charge of manufacturing.

A new wear tester was recently installed at the **United States Testing Co.** laboratory, designed to indicate more accurately the abrasion resistance of resin treated fabric. The firm has also announced the removal of its Los Angeles branch to a newly constructed building at 1723 South Maple Ave.

C. W. Bliss, formerly controller of **Warner & Swasey Co.**, has been elected treasurer. Other new officers are: Irving C. Bolton, financial vice-president; E. B. Gausby, secretary; and Warner Seely, vice-president.

Worthington Pump and Machinery Corp. has announced the appointment of A. F. Reinking, formerly assistant sales manager, as manager of the steam turbine sales division. The firm recently broke ground for its twentieth plant, a vertical turbine pump plant at Succasunna, N. J.

J. H. Skipper is now district commercial sales manager of **York Corp.'s** southern district, with headquarters in Atlanta, Ga. He replaces W. B. Cooper, resigned.

Meese, Inc., Madison, Ind., has appointed H. T. Day salesman for the firm's Shamrock line of convas baskets, his territory comprising Maryland, Delaware, District of Columbia, eastern Virginia, eastern Pennsylvania, eastern New York State and New Jersey.

Ernest W. Reid was recently elected president of the **Corn Products Refining Co.**, succeeding Morris Sayre, now vice-chairman of the board of directors. Howard G. Wascher, who has retired as executive vice-president, was elected chairman of the executive committee.

Mark W. Cresap, Jr., has joined **Westinghouse Electric Corp.**, as a vice-president and assistant to president Gwilym A. Price. E. W. Ritter, manager of the firm's new electronic tube division, has been named a vice-president also; and E. V. Huggins was elected to the post of executive vice-president of the Westinghouse Electric International Co., foreign trade subsidiary of Westinghouse. William G. Marshall, who was in charge of industrial relations for 17 years, has retired.

H. R. Backhouse, managing director of **Mellor Bromley & Co., Ltd.**, Leicester, England, was recently elected chairman of the board of directors, succeeding T. C. Bromley, deceased. Among other American firms, Mellor Bromley are the agents for Robert Reiner, Inc., Weehawken, N. J.

George W. Murray, connected with the wool processing industry for over

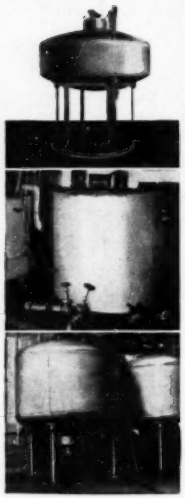
Mr. Murray

twenty years, has joined **Dexter Chemical Corp.** as New England salesman.

The organic chemicals department of **E. I. du Pont de Nemours & Co.**,

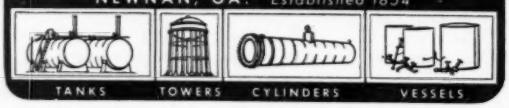
RUGGED in design . . . LIGHT in weight!
MILTON GIVES YOU TRUE DIMENSIONAL STABILITY without objectionable deflection or distortion!
it takes GOOD BEAMS to make good warps!
PROVEN IN SERVICE
warping unprecedented yardages of monofilament; fine denier, low turn nylon; and rubber yarns
WITHSTAND EXCESSIVE PRESSURES
MILTON NYLON & RUBBER TRICOT BEAM
Forged, heat-treated aluminum alloy heads and barrels permanently joined with continuous heliarc welds.
THERE'S A MILTON BEAM FOR EVERY APPLICATION . . .
permanent mold TRICOT BEAMS
SECTION BEAMS
WRITE FOR BULLETIN 49-A for complete information
MILTON MACHINE WORKS, Inc.
DESIGNERS — ENGINEERS — MANUFACTURERS
MILTON, PENNA.

Kettles . . Kiers . . Vats
for
TEXTILE LIQUIDS



• COLE builds vessels to your specifications — dye-vats, kiers, starch-kettles, acid tanks, jib boxes, or other processing vessels for the finishing and dyeing industry . . . in stainless steel, nickel-clad steel, or of standard steel lined with monel metal. Our long experience in the design and fabrication of vessels for the textile industry may be of help to you. Write for latest Cole catalog—"Tank Talk."

R. D. COLE MFG. CO.
NEWNAN, GA. *Established 1854*

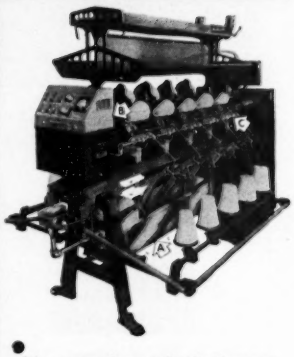


TANKS TOWERS CYLINDERS VESSELS

new patented invention . . . .
SURCO-5 CONDITIONING

Highlights

(1) Perfect yarn conditioning now possible on most conventional yarn winders.
(2) Conditions entire surface of package layer by layer and not the individual thread.
(3) Replaces accurately any amount of moisture lost in previous operations.
(4) Surco*-5, also lubricates — hence produces a better running yarn in all subsequent processing such as warping, knitting, weaving, etc.
(5) Electronic controls permit operating of winder either with or without Surco-5.



• *We guarantee perfectly homogeneous distribution of moisture throughout the yarn package.*

Ask for Pamphlet 1052

*Reg. U. S. Pat. Off.

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Kearny, N. J. — Greenville, S. C.
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Water Repellent

—PJ— one bath

—#40— two bath

Two of the exclusive textile chemicals developed by Kali to meet today's processing problems efficiently.

WATERSHIELD is easily dispersed in baths at temperatures from 120° F and higher without the bath breaking.

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has announced plans for expansion of manufacturing facilities for "Ponsol" dyes at Deepwater Point, N. J. No erection of buildings will be required, as the existing plant will be expanded and modernized. The addition to the firm's new experimental station in Wilmington, Del., was dedicated on May 10 before an assembly of distinguished academic and industrial scientists. Dr. James B. Conant, president of Harvard University, and Crawford H. Greenewalt, president of the DuPont Co., were among the speakers.

Dr. Charles Allen Thomas, who has been identified with the production of the atomic bomb, has been elected president of **Monsanto Chemical Co.** He succeeds William M. Rand, retired. In the Merrimac Division of the firm, Elmer H. Rossin has been appointed technical service manager of the textile chemicals sales department, replacing Francis K. Burr, who resigned to join the Burlington Mills Corp.

Alfred G. Malluck will be manager of **Supreme Knitting Machine Co.'s** new branch office at 711 South Tryon St., Charlotte, N. C. This office will handle Supreme's sales and service for the entire southern area.

SKF Industries, Inc., has announced the appointment of Norman A. Strang to succeed Robert C. Byler, deceased, as advertising manager.

Edwin R. Jerome, with **Victor Ring Traveler Co.** for more than forty years, has been made vice-president and sales manager of the firm.

Melvin S. Scott has been named general machinery division sales representative in the Shreveport, La., office of **Allis-Chalmers Manufacturing Co.** John E. Watson has been assigned to the firm's Birmingham, Ala., district office; James P. Boger to Charlotte, N. C.; Stephen Hogg, Jr., Atlanta; and Wilson O. Vaughn, Richmond, Va.

Atlantic Steel Co., originally known as the Atlanta Steel Hoop Co., is celebrating its 50th anniversary this year. In conjunction with its anniversary celebration the company has published "The Story of Dixisteel" by Charles F. Stone, chairman of the board of directors.

A new one-story building, now under construction, will increase by nearly 25% the working area in the headquarters of **The Foxboro Co.,** according to a recent announcement. Also, a training school building is being erected.

Francis H. M. New has been appointed southern representative for **Riggs and Lombard, Inc.,** with headquarters at P. O. Box 1083, Greenville, S. C. Before joining the firm, Mr. New owned and managed a business for erecting and servicing mechanical power transmission equipment and other machinery for the textile industry.

Mr. New

Edward P. Killackey has been named treasurer of **Celanese Corp. of America,** succeeding George H. Richards, who remains a vice-president. New vice-presidents are William L. O'Donovan, in charge of general sales; Bjorn Andersen, research; and K. C. Loughlin, southern sales. The new dissolving pulp mill of Columbia Cellulose Co. Ltd., Canadian affiliate, has begun operations with an indicated annual capacity of approximately 70,000 tons of high alpha cellulose. The firm has also announced plans for construction of a chemical plant at Pampa, Texas, for production of materials to be used in manufacture of yarns and plastics, synthetic rubber, pharmaceuticals, etc.

Flagg, Brackett & Durgin, Inc., has been appointed New England representative for **Graver Water Conditioning Co.**

Charles Kuhn, with the Manhattan Rubber Division of **Raybestos-Manhattan, Inc.,** for 57 years, retired on April 30. George W. Marshall, Jr.,

SUPPLIERS News
WHAT THEY ARE DOING

HOW ANDERSON SHIELDS INCREASE SPINNING ROOM EFFICIENCY

Spinning rooms using Anderson Shields save time and money, and prevent disruption when unnecessary breaking, chipping, and splitting of bobbins and spools is avoided. In a year's time these items alone can amount to a surprising sum . . . Insist on Anderson and get the best protection metal shields afford . . . Watch your spinning room efficiency increase!

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SUPPLIERS News
WHAT THEY ARE DOING

and Alvin F. Heinsohn were recently elected vice-presidents of the firm. Both men are directors of Raybestos-Manhattan, Inc.

M. L. Johnston, with the **National Ring Traveler Co.**, since the first of

Mr. Johnston

the year, has been assigned to the North Carolina and eastern Tennessee territory.

E. T. Asplundh was recently named president of **Southern Alkali Corp.**, and Clarence M. Brown was made chairman of the board of directors. Southern Alkali is a subsidiary of **Pittsburgh Plate Glass Co.**

John R. Potter, Harry E. Martin, and H. Morgan Rogers were recently elected to the board of directors of **Lockwood Greene Engineers, Inc.**

Hatch Textile Research, New York, N. Y., is celebrating its 25th anniversary as an independent textile testing laboratory.

Charles E. Frohman has been made president of **The Hinde & Dausch Paper Co.**, succeeding Sidney Frohman, now chairman of the board.

Certificates of Cooperation were recently awarded by the Economic Cooperation Administration to the **Foster Machine Co.** and **Hemphill Co.** The firms were congratulated on their cooperation in furnishing technical assistance to the members of the Marshall Plan nations.

William S. Richardson, president of B. F. Goodrich Chemical Co., has also been made a vice-president of **The B. F. Goodrich Co.**, of which Goodrich Chemical is a subsidiary.

Glass Fibers, Inc., has moved its offices to 1810 Madison Ave., Toledo 2, Ohio.

Scott & Williams, Inc., has completed an agreement with Lindsay H. Browne, William M. Frazer, and Christian W. Logeman for the exclusive right to manufacture, distribute, and sell a hydraulic pump invented by Mr. Browne and to be known as the Scott & Williams Hydropulse Pump. Included in the agreement is an arrangement for the manufacture and sale by Scott & Williams of the C. W. Logeman Co. line of homogenizers, featuring the Hydropulse Pump together with auxiliary equipment.

The product will be manufactured in Scott & Williams' plant at Laconia, N. H., with distribution and sales from the firm's office at the Empire State Building, New York City.

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This is a reprint of 26 pages 8½ x 11 of a series of articles which were previously published in "Textile Industries," containing valuable information, illustrations, tables, charts and diagrams.

Fay H. Martin was a recognized authority on the roving frame. This book has been adopted by textile schools and vocational schools. May be secured in conjunction with a 3-year subscription to "Textile Industries" for $5.00 (Foreign, $11.00).

TEXTILE INDUSTRIES

806 Peachtree St., N.E. Atlanta 5, Georgia

Edwin F. Greene, textile mill broker, has moved his office to the Hotel Langdon, 2 East 56th St., New York, N. Y.

C. Edgar Smith, formerly executive vice-president, has been made president of the **Towmotor Corp.** Lester M. Sears, founder and former president, is now chairman of the company's board of directors. Robert L. Fairbank, formerly with Firestone

Mr. Fairbank

Tire and Rubber Co., has joined the firm as sales manager.

James D. Wise has been named president of **Hartford Rayon Corp.,** succeeding William Steinschneider. Other officers elected were: John A. Donaldson, vice-president and treasurer; Robert B. Freeman, vice-president; Rodney Piper, secretary and assistant treasurer; and Katherine A. McCarthy, assistant secretary. New directors elected were James D. Wise, president of Bigelow-Sanford Carpet Co., and W. H. Fryer, John A. Donaldson, and R. B. Freeman, all officers of Bigelow-Sanford.

Clinton F. Hegg has been named sales manager of the fiber glass division of **Libbey-Owens-Ford Glass Co.,** and Claude F. Harr is now manager of the sales technical service department of this division. Both men have their offices in the Wayne Building, Toledo, O.

Montgomery & Crawford Co., Spartanburg, S. C., has announced the appointment of W. M. Walker as sales manager of the wholesale industrial supply department. Mr. Walker was previously with Crawford and Garner of Greer, S. C.

Lewis C. Briggs, III, sales manager, and James E. Oliver, representative, have resigned from **Allen Beam Co.**

42
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12—C&K S-6 56" B.S., motor-driven, brand-new
73—C&K S-5 56" B.S., motor-driven, 1942

20—C&K W-2 96" B.S. 4x1, 550V motor, 1936

92—C&K TERRY TOWEL LOOMS, 26"-36" goods, all automatic belt-driven, 2x1 and 4x1

50—Stafford Rayon Shuttle Changing Looms—40" goods, motorized
12—Stafford Automatic Looms—76" reed, motor-driven

SPINNING FRAMES

4—Saco-Lowell 3½" ga.—tape drive, 252 sp. ea., long-draft, motor-driven, 1935
32—Whitin 3¼" ga.—tape drive, 252 sp. ea., 1930
20—Whitin 3½" ga.—tape drive, 252 sp. ea., 1921
14—Whitin 3" ga.—tape drive, 240 sp. ea., 1920
46—Whitin 3¼" ga.—band drive, 252 sp. ea.

WINDERS

3—Foster No. 103—100 sp. ea., double motors
2—Foster Doublers No. 55—72 sp. ea., 1/5 h.p. motor, rebuilt 1948

36—H&B 45" Cards — 26" doffers — 12" coilers

MISCELLANEOUS

4—Whitin 8x4 Slubbers—72 sp. ea., with Interdraft
3—Saco-Lowell 12x6 Slubbers—68 sp. ea.
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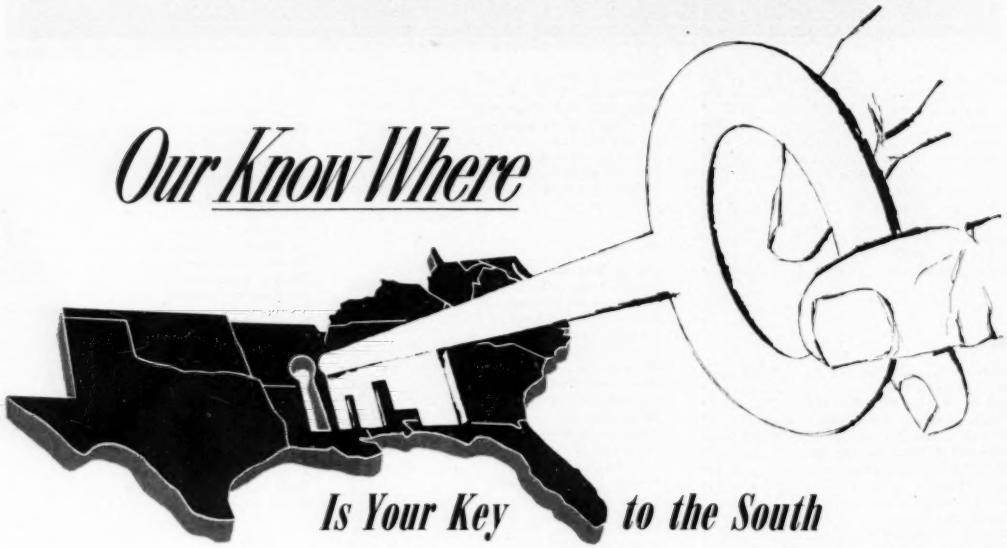

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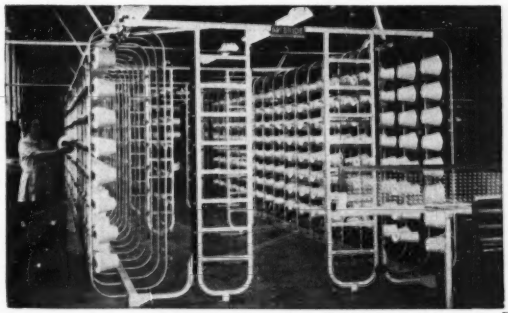

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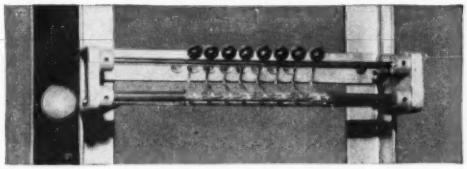

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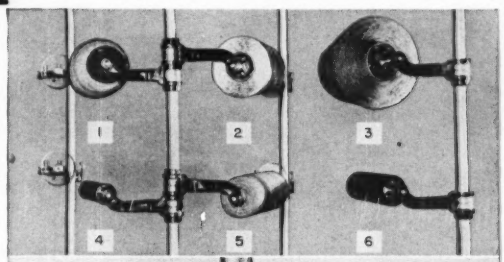

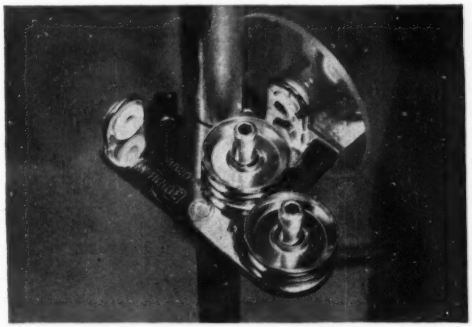

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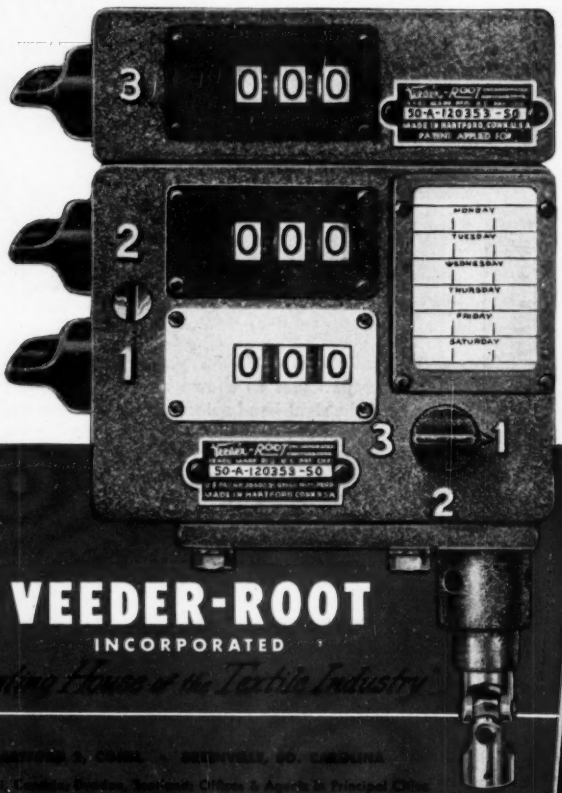

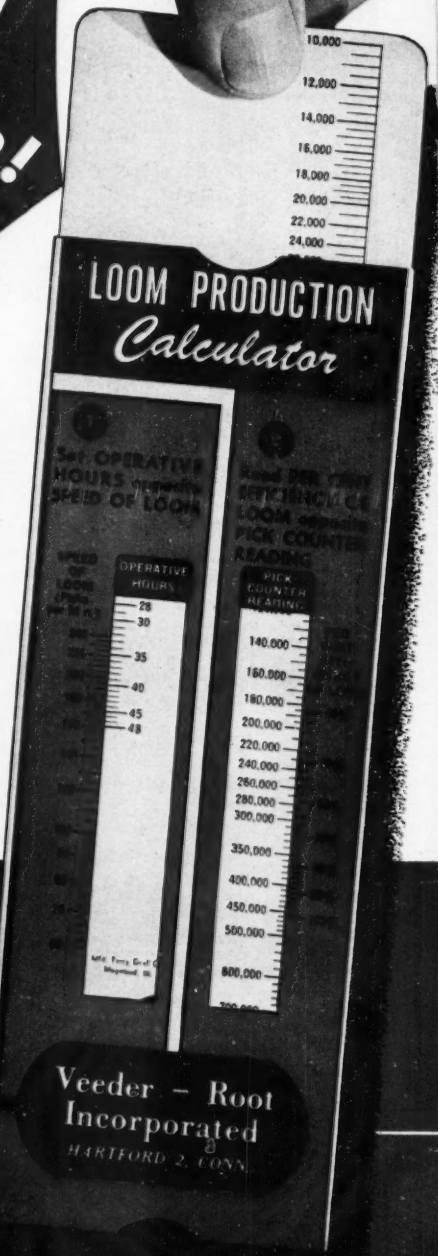

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